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JANUARY, 1920

# VISUAL EDUCATION

VOLUME I.

NUMBER 1

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION



PUBLISHED EVERY MONTH EXCEPT JULY AND AUGUST

BY THE

SOCIETY FOR VISUAL EDUCATION, INC.  
CHICAGO, ILLINOIS

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# SOCIETY FOR VISUAL EDUCATION, INC.

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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President  
FOREST R. MOULTON, Secretary

NELSON L. GREENE, Editor  
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# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

NELSON L. GREENE, Editor

HARLEY L. CLARKE, Manager

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Volume I

JANUARY, 1920

Number 1

## Foreword

“WORK and Play” is a phrase that has attained the dignity of authority in the language as a fairly adequate synonym for the whole waking activity of man. The dominant factor governing “work” is the reason; the dominant factor governing “play” is the emotions. With equal simplicity and sufficient accuracy human inventions and discoveries may be roughly classified in two corresponding groups; those calculated for the “work” side of life and appealing to the reason, and those concerned with the “play” side of life and appealing to the emotions. The wheelbarrow and the sewing-machine are obvious examples of the former, and by far the larger group; the kaleidoscope and the merry-go-round would seem to belong exclusively to the latter.

These categories, however, are not mutually exclusive. Many a device serves both ends, regardless of the intentions of the inventor. If a given invention contains possibilities for both utility and amusement, it is interesting to note the apparent rule that the amusement possibilities will be developed first. The rationalizing process of passing time reveals the other—and generally richer possibilities. This is a strictly logical phenomenon, for the emotions answer an appeal more promptly than the reason. Hence a novelty often becomes established as a toy before it occurs to the reason that the toy may be used as well for work.

Mankind has been busy devising toys and tools since the dawn of history. The whole march of the race out of the prehistoric fog down to the year of Our Lord, 1920, has been punctuated by inventions that have gradually transformed the world—that have finally dulled the edge of wonder. Yet the human spirit that achieved these miracles of science, holds still the primal appetite for laughter and amusement. It is a never-sleeping instinct, primitive, elemental, strong. It claims the first tribute from each new discovery, arrogating to itself each novelty as it appears—and the intellect must wait till curiosity and shaking sides subside.

\* \* \*

In all probability the first hieroglyphics were merely entertainment for the artist and his onlookers. Cadmus, with his mighty alphabet, must have first excited wonder and amusement; little did he or his disciples dream that, but for those magic little marks, the world would remain practically inarticulate. Mechanical science was born in the making of toys. Tops were spinning in Homer’s day for the amusement of young mankind, but it was a far cry to the

gyroscopic governors of modern engines. Archimedes' burning-glass, his water elevator, and numerous other ingenuities that he did not think worthy of record in his writings, these were the things that gave the great geometrician his widest fame in the ancient world. The mass of his contemporaries were dazzled by his *minor achievements*. These devices fascinated rather than served; their appeal reached first the emotions which are quick to respond, rather than the reason which is slow. Men were children in the presence of a novelty in those days.

Nor have they changed much since in this respect. When the omnipotent little Printing Press assisted at the birth of the modern world and made effective the power of the human intellect—the most subtle and resistless force in the cosmos—many a learned mind and pious heart grieved at this invention of the devil; for it poured forth so many frivolities which would lead the world inevitably to perdition. The first dingy efforts of Daguerre amused, but hardly suggested the dazzling future of Photography. Yet think of the toiling cameras today, snapping ceaselessly around the world; at midnight, at noon; in thousands of workshops and laboratories, engraving plants and glaring studios; on the earth, in the air, under the sea; endlessly turning out their mighty values for the world of business. Photography has passed the amusement stage. The click of the summer-resort snapshot is drowned in the chorus of commercial shutters.

The dominant emotions experienced in the first steps of modern transportation sprang from the fascination of being moved from one place to another by a lifeless mechanism; not from the consciousness that a revolution in human living was at hand. The first trains were for the curious—gaily-dressed, beparasolled ladies with their escorts, adventurers out for a thrilling holiday. Freight—the world's sustenance today—was an afterthought. The first steamships carried chattering passengers, not merchandise. Now the whole face of the sea is wrinkled with wakes of a myriad ships, but most of them are "tramps," not "greyhounds." Recall the merry velocipede and the bicycle that followed it to its more and more utilitarian destiny. The horseless "carriage" preceded the "truck." The aeroplane carried no mail nor ammunition till it had carried sportsmen and professional entertainers.

The first occupation of the *Roentgen rays* was to show to titillating witnesses coins in leather purses and nails in shoe-heels. Yet modern medical science owes its astounding progress largely to these same X-rays. The *Wireless Telegraph* was long a prize attraction on the lecture platform. It put many little lecturers on the road to success before it set struggling ships on their course through the storm. It was amusing thousands in Chautauqua tents before it began keeping millions safe on the high seas. The *Phonograph* was merely "funny" at the start. From its early success in the penny arcades, it has become a genuine cultural force among America's millions. The art of Literature benefited hardly more by Printing than the art of Music benefits by the Phonograph. The *Stereopticon* and the *Stereoscope* have had a similar career. The former went through a novelty period, but few educators today would deny that the lantern slide is a cultural and educational means of high value. The *Stereoscope's* first mission was to supply summer-vacation wages to student canvassers and breathless entertainment to

the curious purchasers of the wonderful thing. If the same little 'scope has now been moved from the marble-topped parlor table to a trunk in the dusty attic, while thousands of new ones are finding daily use in American schools, it proves merely that the amusement days are over, the utility days are come.

Thus in the end—in the dear old “long run”—every invention comes into its own and turns at last to the greater service. It is a law.

\* \* \*

Now comes the *Motion Picture*, the big brother of the lens family, the colossus among all amusement devices ever known to the race. Whether this giant proves to be the ogre that a host of educators have seemed to fear, or a mighty benefactor to their cause depends on the educators themselves.

Why—when they know perfectly well the above facts—why do some intelligent people still feel called upon to “despise” the Motion Picture? Why do they condemn this innocent device for running the same lawless course that greater things have run before it? The whole story of human progress hangs on ideas, discoveries and inventions that wrinkled the corners of the mouth before they wrinkled the forehead. The Motion Picture is not yet through with the corners of the mouth. It has not yet begun its real work on the forehead of this nation and the world.

On the other hand, thousands of intellectual men are awake to the existence of this new giant in our midst. Thousands more are stirring in their sleep. There is a vast deal of vague thinking on this subject going on throughout the country. The educational world is uneasy from a growing suspicion that there is real value wrapped up in the Motion Picture, which is as yet undetermined. Thinking men are dimly conscious that something important is being missed in the monster industry that is rolling up its mushroom millions every week.

Yet all this random cerebration is getting us nowhere. Like the waves of the wireless which cannot be directed, the half-formed ideas of individuals are dissipated in the academic ether, reaching by chance but a few listeners here and there, out of the many who would like to hear. There exists no adequate means for collecting these vagrant ideas, making them accessible to all who would like to survey the field and analyze the present consensus of opinion as a basis for further study. Already a large audience of educators of all ranks, high and humble, are ready and eager to hear the question discussed, to take active part in the discussion.

This magazine is interested in the whole subject of visual education. We believe whole-heartedly in all rational means thus far devised for taking full advantage of the great educative capacity of the human eye. Maps, Charts, Diagrams, Models, Prints—when properly made—need no defense as legitimate and valuable adjuncts to the classroom equipment. The learned world has long since ceased to doubt the value of the Laboratory. It would be ridiculous in our day to argue for the worth of the Microscope or the Telescope. The position of the Stereopticon and the Stereoscope in the pedagogic economy is quite secure. Out of all, only the Motion Picture seems to need defending, and this late-comer, we fancy, when once the proper hands are at work upon

it, will outstrip most of its predecessors in its total contribution to the great work of American education.

\* \* \*

"Visual Education," therefore, enters the field of educational magazines with the solemn resolution to do its utmost toward the extension of all existing activities along the line of visual instruction. It will seek also to promote by every appropriate means the sane and scholarly development of the new resources put within our reach by the Motion Picture.

As a necessary initial step to these ends, Visual Education offers itself as a clearing-house for ideas on this great subject, which will not be silenced much longer. The country is seething with the vague aspirations or maudlin enthusiasms of well-intentioned promoters of screen education, and with the anxious misgivings or virulent antagonisms of teachers who fear the invasion of commercial crudeness. It is time that serious men became articulate. Somewhere amid it all there is truth which must appear in due time. Visual Education aims to find and publish it, in all its forms, from all fruitful sources, whether it come from babes or sages. We believe it will come from both.

For the commercial "Movies," the pioneer days are passed. For the educational picture they are just beginning and it is time for the academic pioneers to strike the trail. We shall print the abstractions of scholarly research and the concrete practice of the classroom; the untested theories of our universities and the convictions built on experience in the grades; the glowing arguments of friends and the acid criticisms of enemies. All material will be welcomed, provided always that the motive and source are serious and sincere, trustworthy, and authoritative, and that all authors accept full responsibility for their statements. On such a foundation the investigation will take on definiteness. Ideas will be crystallized, precise aims formulated, real and fictitious values distinguished, and progress toward real conclusions will begin.

Further, we plan to collect and present, as rapidly as is consistent with accuracy, data from all sources bearing upon this question. Beginning with the February number, Visual Education will supply monthly reference lists of current magazine articles with brief indications of the nature and contents of each. Partial reprints of important material will be given frequently. Short reviews of significant new books as they appear, together with lists and summaries of volumes previously written on the subject, will constitute a department by itself. Ultimately this Bibliography will cover the entire literature of the subject. It will provide material for exhaustive study of the general topic of Visual Education, and incidentally will afford a basis for estimating the total serious achievement of the Motion Picture since its inception.

A separate department is planned for Correspondents, which will undertake to print significant letters received during the month and give general or specific answers to all communications. Readers are urged to take advantage of the opportunity thus afforded for establishing and maintaining intimate contact with this magazine and thereby with the whole movement. If we are to achieve concerted action, it is important that the whole rank and file of educators

be constantly informed of the status of the movement. This department should serve as a valuable means to that end.

\* \* \*

We believe that the future awaiting the present efforts toward visual education will be more brilliant than the dreams of its most ardent devotees. Undoubtedly, much of the prophecy now being uttered so freely on all sides will prove to have been either false or gravely misdirected. But the future will come—as the future always does—and it will bring to American education great benefit or untold harm according as it is moulded by the sound judgments of educational experts or by the bungling hands of enthusiastic tyros. “Visual Education” is at the service of the former, to be freely used in any and all ways that the best interests of the cause shall dictate.

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“This picture tells me in an instant what would be spread over ten printed pages.”

Turgenev.

“Visual Education presents the most promising avenue of approach to the final solution of the great problem of a truly universal education.”

Bagley.



## Why the Society for Visual Education ?

THERE are enough organizations now attempting to minister to the needs of public education. A new organization has no right to come into existence unless it has a new function to perform or has a better way of performing some function which already exists. There is no virtue in increasing the number of organizations nor in adding one whose excuse is found in "just being different." There are motion pictures galore and motion picture theatres open at every corner. School children throughout the country are already attending motion pictures in large numbers. Many schools are endeavoring to make some kind of use of motion pictures within the school walls.

The school's business is serious, however, and, while most of us desire to make school life interesting and pleasant, we must never forget that it is serious and that it must relate to the training of people so that they may be more effective citizens. Therefore, when motion pictures are introduced into the school or when school children attend picture theatres we must ask ourselves whether a contribution is being made to the serious work for which the schools exist. This question cannot be asked merely "in the large," but must be asked either with reference to the specific subjects that are included in the school curriculum or with reference to social or community service or personal ideals which we expect the school's activities to develop. Furthermore, when this question is asked we are at once led to the conclusion that a very vital interest has been used essentially as a means of superficial entertainment rather than as a means of fundamental education. It is highly desirable, therefore, that experienced and thoughtful school people shall turn their attention to a thorough study of the correct place of motion pictures in modern education.

There exist fundamental educational reasons for the use of motion pictures. It is a matter of common experience that we learn more rapidly and retain longer when our learning is based upon first-hand contacts with materials and processes. Our thinking is very much more secure if it rests upon our own experiences rather than upon reports by others. It is often said, "I have seen it with my own eyes," and because of having thus seen, our judgments are better, and we can more readily understand and judge the arguments of others. The eye, as a means through which knowledge comes to us, is second to no other one of the senses. There are innumerable experiences which we need in order to understand the busy world in which we live, and most people cannot have a large number of these first hand. In order that learning may be as nearly correct and as extensive as possible, it is desired to increase to the maximum the opportunity of observing occurrences from real situations which may not be visited. There is no better way of putting these situations before the learner than through motion pictures, for, if properly made, these pictures tell the truth of things because they portray the movements, expressions, processes, etc., which really occur.

If *seeing* through motion pictures, as suggested above, were the only thing that is done, it would be scarcely worth while. The *development* in class instruction of the fundamental ideas that are related to the things seen is entirely essen-

tial, and the school should be organized so as to make the largest use of this kind of thinking. If there were nothing but exposure to the interesting situations presented by the films—that is, if the pupils were allowed to visit promiscuously the various motion picture theatres that are available to them without having their thoughts stimulated concerning the things observed—they would be interested and pleased, but not fundamentally instructed. Careful thought development relating to the things observed is just as essential as the preceding observation. Indeed, exposure without development is as unprofitable as would be true in photography. If a photographer were to expose his sensitive plates to a variety of situations without developing each situation upon a single plate, his work would be profitless. If more than one exposure is made upon a single sensitive plate and development then follows, a “confused blur” is the result. The successful photographer knows that proper exposure followed by proper amount of development provide the only means of securing the clean-cut permanent negative which is essential. From such a negative clear and satisfactory new impressions may be taken at any future time. This analogy, when applied to the field of educational psychology, illustrates a definite reason for the use of motion pictures as well as for the thought development subsequent to this use. School work has dealt too largely with thought development which did not have adequate exposure, and motion picture theatres have too often over-exposed without the requisite thought development. It is possible and necessary that these two elements be so arranged that they shall supplement each other.

The relation of visual instruction to reading is also fundamental. We are interested in reading, and read more intelligently concerning the things about which we already have some information. Much reading is dead to the reader because it does not relate to a vital experience and a vital need. Motion pictures concerning travel, industry, manufacture, social and civic situations furnish the stimulus for reading about these matters and also furnish the concrete basis for interpretation and understanding of the things that are read. Proper visual instruction, therefore, increases the use of reading as well as increases the intellectual aspects of reading.

It must be clear that motion pictures will not serve their proper use in schools unless they are selected and organized with direct reference to the subjects of the curriculum. There is a tremendous opportunity for educational advance through the development of films upon an educational basis. Carefully selected situations, photographed by the best motion picture experts, and edited by those who know what these pictures should contribute as a part of the regular instructional work of the school, furnish not only an opportunity, but supply an important demand in modern education. This is a large task to undertake. That its importance is recognized is shown by the fact that representatives of the National Government, of the National Geographic Society and of various organizations of educational people are now offering their materials for educational uses and have expressed their desire to incorporate those materials into an organic relation with the curriculum.

Those who have entered into the organization of The Society for Visual



Education have done so with the belief that the organization can make some of the needed contributions to the improvement of our educational practice.

OTIS W. CALDWELL,  
*Director of The Lincoln School of Teachers College,  
Columbia University.*

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The first public announcement of the Society for Visual Education, Inc., was made by Dr. F. R. Moulton in an informal address delivered to the delegates of the National Federation of College Women, assembled in convention at the Auditorium Hotel, Chicago, on November 19, 1919. The work of the Society has since received the hearty endorsement of this and other national organizations concerned with educational, civic and social progress. A list of these organizations will be printed in an early issue of Visual Education.

The Society now has descriptive literature ready for distribution, setting forth clearly the personnel and the intentions of the organization. This material will be mailed promptly to any address upon request.

# The Need of Experimental Investigation of Visual Instruction.

(EDITOR'S NOTE—Additional articles on the work of the Research Committee, written by Dr. Russell and his Associates, will appear in later issues throughout the year.)

ONE outstanding feature of the schools of Japan, which at once strikes a visitor, is the extraordinary use that is made of objective equipment. In some of the schools in Tokyo the walls are lined with pictures; cabinets contain file after file of newspaper cuts kept for assistance in teaching hygiene, geography, history and citizenship; and in one room which impressed the writer particularly, there was a rack of charts extending down the entire side of a room, each kept conveniently at hand to be used when the occasion demanded. Charts are also used in moral instruction, the most important subject in the Japanese course of study. Every school child has one recitation every day in this subject; and to assist in its proper teaching, a series of pictures or charts is supplied to the school.

While the schools of the United States have been backward in the use of visual equipment in teaching, there are signs that we are soon to learn this lesson. School rooms are changing their appearance. We see bulletin boards covered with clippings. We note pictures clipped from magazines. The stereopticon lantern is becoming more common. Extension departments of state institutions are routing lantern slides; and in many sections of the country the use of the motion picture is becoming increasingly common. It is probably not an extravagant statement to say that in the next few years, great progress will be made in the introduction into our schools of all sorts of visual aids, and the most important of these will be the moving picture.

This progress cannot be of the right sort, however, unless the introduction of the motion picture is made in exactly the right way. There was once a time when the only road to educational progress lay in the time-honored method of trial and error. We introduced a new method, an original device, or a strange subject in fear and trembling. An enthusiastic traveler would report upon a difference in practice between our schools and those of another country. A professor would develop a new theory. One by one the schools would take it up and work with it. Sometimes it would fail. Occasionally it would succeed. We were never sure as to the exact cause either of its success or its failure. And then after long trial and frequent mistakes it would either be widely adopted or forgotten. But at no time were school men in possession of the results of exact scientific experimentation either as to the general or particular advantages of the method, device or idea that was on trial. We must avoid this mistake with the motion picture.

There is probably no universal panacea for all the ills of class-room teaching. It is probable that the motion picture will not solve all our problems. It is altogether likely that there are certain places in the teaching process where it will be a waste of time, where it is more likely to impede progress than to make it. It is also likely that there are certain subjects and certain places where it will be of great worth.

The thing that progressive school men must guard against, therefore, is failure to know exactly the use that we must make of this objective aid. If we introduce it as an experiment and happen accidentally to use it in a place where it does no good, we must protect ourselves from the danger of judging too hastily and discarding the whole matter without careful trial. If by chance we try it in a place where it is most likely to succeed we must protect ourselves from the danger of overenthusiasm.

There is only one way to accomplish this. We must subject the use of the motion picture in schools to the same scientific scrutiny that today is being given to the teaching of spelling, to the use of drill work, to the use of phonics in the teaching of beginning reading, to the value of supervised study, to the measurement of results of teaching and problems of a similar sort.

One object of the Society for Visual Education will be to supply to the educational world accurate information based upon the results of scientific experiment as to the right and wrong kinds of school films, right and wrong places to use them, and right and wrong methods of teaching with them. We are gathering together a committee of investigators who will act in an advisory capacity in planning and mapping out experimental investigation and we are supplying funds to see that these experiments are carried to a convincing conclusion. It is our intention that experiments of a fundamental sort shall be carefully devised and tried in a few places to perfect the method of work. We then expect to publish the tentative results, and, to verify our conclusion, to try the same experiments on many children in many schools. Only in this way can the motion picture achieve its greatest success in the American school, and if we receive the co-operation of our teachers, we can safely say that we can eliminate years of inadequate trial and error in our schools.

A more specific statement of the plans of the committee will appear in the February number of VISUAL EDUCATION.

WILLIAM F. RUSSELL,

*Dean of the College of Education, University of Iowa.*

*Chairman, Committee on Educational Research.*

## Visual Instruction in the Public Schools of Evanston, Ill.

AT its regular meeting in June, 1919, the Board of Education of District 75 authorized the organization of a bureau of visual instruction in its school curriculum. In taking this action, the Board had two purposes in mind—first, to establish more definitely the use of motion pictures in the system, and, secondly, to obtain a closer and more immediate correlation between the films and the subject matter in the school courses. The words “more definitely” are used advisedly, for the Evanston schools have made use of regular educational motion picture programs since November, 1918.

The introduction of the educational type of film into our schools was a matter of evolution, based upon seven years of experimentation in various school systems on the part of the director of the Evanston bureau, and guided by the observation of the efforts of our best educators and of many progressive school administrators in all parts of our country, to evolve a method which would adapt the cinema to the school needs.

In this connection, many empirical attempts, often abortive, can be cited, but they serve to demonstrate that consciousness everywhere is awakening to the educative possibilities of motion pictures. One needs only to review the educational publications of this and other countries to judge of the progress that is being made in this field and to note the direction in which this progress is tending.

As outstanding guideposts of the movement, reference should be made to

(a) Recent decisions of Boards of Education in such important school centers as Newark and Detroit, to establish departments of visual instruction. To-wit:

In a recent magazine article, Mr. A. G. Balcom, Superintendent of the Newark schools says, “Newark, N. J., is one of the first of the larger cities of the United States seriously and officially, through its board of education, to adopt motion pictures as an integral part of its school system. Visual education, so far as Newark is concerned, is an accepted fact. The school board has authorized its superintendent, through his assistants assigned for the purpose, to equip the schools of the city with fireproof booths and standard professional apparatus, and it has authorized appropriations for educational film service.”

Likewise, Mr. Charles L. Spain, Deputy Superintendent of the Detroit schools, says: “In Detroit we are just getting started on motion picture work in our public schools and have purchased a

number of projection machines. We have contracted for films covering quite a field, including travel, literature, history and a great many industrial films. The Ford Motor Company is still at work upon production of films for us under the direction of our supervisor of geography, but so far no films have been released. We are using motion pictures in fourteen schools, organized on the platoon plan, our form of organization being that one day each week is given over entirely to film work in the auditorium of the school. Machines are being operated by the teachers themselves and the film service is being cared for by the supervisor of this work. It is expected that this work will be extended next year to include probably fifteen or twenty more schools.”

(b) The work of visual instruction carried on by the extension departments of state universities such as the University of Wisconsin and Iowa State College.

(c) The recent activities in visual education on the part of state departments of public instruction of which the efforts of the department of North Carolina are typical.

Evanston is by no means in the rear guard of this movement, for motion picture programs, selected for community evening entertainments and for so-called educational afternoon presentations, shown after school sessions, were irregularly carried on several years before the fall of 1918.

At this time four of our grade school buildings, which were provided with projection apparatus, became the nucleus of an earnest endeavor to promote the establishment of a regular circuit of educational films within our own school system. The experiment developed in the following manner. For several months, two and three-reel programs were shown weekly, within school hours. No attempt was made, during this time, to correlate the pictures with the study of text material, but they were given for the general educative information which they might impart. Some attempt was made to announce the titles of the films a day or two in advance of their appearance on the screen, for it was hoped that the teachers might incorporate the picture topics in their language lessons. Typical among the films shown were these—"Mexico's Floating Gardens," "Night Animals," "Furs and Quills," "Screen Telegrams," Pathé and Ford "Weeklies," and kindred material.

Furthermore, there was not, during these first months, any attempt to adapt certain films to different grade groups of children, but all films were shown, without differentiation, to all the pupils of the schools.

The cost of these regular weekly shows was defrayed by an "entertainment fund" which was supplied by the receipts from monthly "diversional movies" in which current drama and comedy plays were shown.

#### Sample of "diversional show" announcement.



#### COME

To Lincolnwood School to our movie and see "Cinderella's" Fairy God-mother turn the mice and pumpkin into a "coach and four."

A new film—All star cast—260 child actors.

Two afternoon shows—3:00 and 4:30. Admission 10 cents.

At eight o'clock another show. One of the world's classics.

New films. Also O. Henry's famous story filmed.

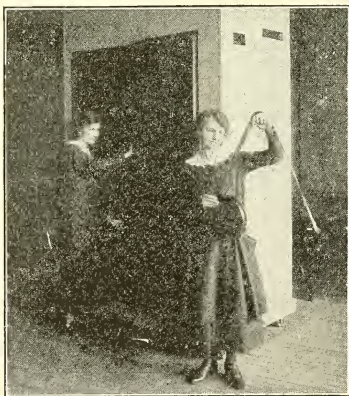
Admission 15 Cents.



The circuit programs were well received by both the children and the teachers, for they clarified and greatly enlivened the drab values of texts hitherto lazily scanned and but partially understood. This enthusiasm gave rise to a new idea—to associate the pictures more closely with the class room work.

Accordingly, in April, 1919, arrangements were made with a large educational film company of Chicago, whereby our “teacher-operator,” Miss Lucile Berg, who has contributed much time and many valuable suggestions to the launching of our “movie” project, was given permission to visit the library exchange of this film corporation from week to week. While there, she selected and reviewed suitable film materials, itemized their subject content, and booked the pictures, usually two weeks in advance of their appearance in the schools. This proceeding enabled us, on the one hand, to discriminate carefully in the choice of purely educational matter which could be directly applied in amplifying and explaining the school texts and, on the other hand, to give to teacher and to pupil a suggestive synopsis in outline form, of the picture to be viewed the week following its receipt.

When, in June, 1919, the members of the Board of Education were apprised of the success of this scheme in the four schools where it was used, they straightway voted an appropriation sufficient to equip all of our eight schools with standard apparatus and, in addition to this, a fund which would cover film rental for the succeeding school year, 1919-1920.



STUDENT OPERATORS AND TYPICAL BOOTH

The installation of all new equipment took place in the summer vacation. In full compliance with the rulings of the fire insurance underwriters of Chicago, every precaution was taken to provide suitable booths for the several machines. In buildings where it was impracticable to construct permanent booths, movable structures, made of 24-gauge sheet steel, were erected on large piano casters, in order that they might, when not in use, be rolled into the most inconspicuous corner of the auditorium or into a convenient closet.

Beginning with the new school term in September, 1919, a regular schedule of picture presentation was observed by the schools. It ran as follows:

Crandon,				Lincolnwood, Wednesday Afternoon			
Rooms	Time	Group		Kg.—1, 2	2:15 to 2:45		
Kg.—1, 2, 3	10:00 to 10:40	1		3, 4, 5	2:50 to 3:30		1
4, 5, 6, 7, 8	11:00 to 11:40	2		6, 7, 8	1:30 to 2:10		2
9, 10, 11, 12	9:00 to 9:40	3					3
Dewey, Tuesday Afternoon				Miller, Monday Afternoon			
Kg.—2, 3	2:15 to 2:45	1		Kg.—2, 3	2:15 to 2:45		1
7, 8, 9, 10	2:50 to 3:30	2		4, 5, 6	2:50 to 3:30		2
11, 12, 13	1:30 to 2:10	3		8, 9, 10	1:30 to 2:10		3
Foster, Wednesday Morning				Noyes, Friday Morning			
Kg.—4, 5	9:50 to 10:30	1		Kg.—B	10:10 to 10:50		1
6, 7, 8, 10	11:00 to 11:40	2		2, 3, 4, 5	11:00 to 11:40		2
9, 11, 12	9:00 to 9:40	3		7 Inter.	9:30 to 10:00		3
Larimer, Tuesday Morning				Orrington, Thursday Afternoon			
Kg.—2, 3	10:00 to 10:40	1		Kg.—2, 3,	2:15 to 2:45		1
4, 5	11:00 to 11:40	2		4, 5, 7	2:50 to 3:30		2
6, 7, 8	9:00 to 9:40	3		8, 9, 10	1:30 to 2:10		3

Each week's program consisted of four topics:

#### TOPIC A

Usually fairy stories, animal action or children's activities pictures.

Shown to kindergarten, first and second grades or Group 1.

#### TOPIC B

Usually animal action pictures, transportation, modes of living (foreign countries) and simple industries.

Shown to third, fourth and fifth grades or Group 2.

#### TOPIC C

Usually geographic, industrial scenes, historical plays, scientific material.

Shown to sixth, seventh and eighth grades or Group 3.

#### TOPIC D

Ford Weeklies

Shown to sixth, seventh and eighth grades or Group 3.

Sample programs are given here to indicate the method of announcement. These outlines are published in our School Bulletin and are distributed each Monday morning to every teacher and school child, which gives them every opportunity to study the topics assigned the various grades.

#### EDUCATIONAL MOVING PICTURES FOR WEEK OF MONDAY, SEP- TEMBER 29, 1919.

**Topic A—Three Bears and Golden Locks.**  
(Diverges somewhat from story.)

**Topic B—Story of Sheep. Shropshire Breed.**

Sheep and lambs.

Yearling ewes.

Ewe lambs.

Sheep dog "rounding up" or "milling" sheep.

Sending dog alone to bring sheep in at night.

Where we got our game of "Follow the Leader."

Seventy-five thousand sheep being driven to shearing ground.

Stables where 2,000 sheep are sheared per day.

(Compare old and new methods of shearing.)

**Topic C—Boston Tea Party, Reel 1.**

Reel 1 shows home life, styles and customs of Colonial times.

**Topic D—Ford Educational Film.**

Unfortunately, it is impossible to secure outlines of these Ford Films at present. Watch for the announcements of the following week's title at the end of the Ford pictures at each successive presentation.

Note: Topic C in this case is a three-reel production and was run one reel each week for three successive weeks.

General colonial history was studied during this time.



Clipping from Evanston School Bulletin, District 75, Monday October 20, 1919:

**EDUCATIONAL MOTION PICTURES  
FOR WEEK BEGINNING  
OCT. 27, 1919.**

**Topic A—African Sea Birds.**

Penguin—on nest. Gathering eggs for London market. Note distress of birds over loss of eggs.

Solon geese or malagas. Island 300 yards square, harbors 300,000 birds. Note how similar their flight is to that of the sea gull. Courtship of malagas. Note black wingtip and tail. Preening for the day.

Duckers or divers.

Ostrich farming—South America. Complete growth, egg to plumed bird. Plucking plumes. Why does covering the head quiet ostrich? Why cut feathers instead of pulling them?

Capturing a bob-cat.

**Topic B—Scenes in Florida.**

Everglades—reclaimed land.

Deep in the everglades.

Ants on sandy soil.

Spanish air moss.

Seminole Indians.

Alligator farm, showing nest, eggs and alligators from those just hatched to full-grown ones.

Florida in winter.

**Topic C—Over the Northern Andes.**

Study relief map of South America—it will be shown on film. Section of scene—Colombia. Colombia has very few railroads, due to the mountains making railroad construction expensive and frequently impossible.

There is a railroad between Cali, on the Cauca river, and Buenaventura on the Pacific. It begins on the plains about Cali and passes over high mountains before reaching Colombia's chief seaport.

The native huts in Buenaventura are made of loose boards and have thatched roofs. The only frame building is the cable station.

Natives live in huts, good-sized boats and under the wharves.

One of the chief products of Colombia is the cocoa bean.

Cachimbo planted with cocoa to protect it from sun.

Cocoa pods growing on branches and trunk. Blossoms and pods grow on tree at same time. (Of what other tree is this characteristic?)

Steps in growth—gathering and preparing of cocoa for market.

Open pod.

Planting bean.

Height attained in one month, three months, three years.

While young, protected by banana tree. (What other plant or tree is protected by banana tree while young? Why banana tree?)

Pods collected from trees with long-forked sticks.

Pods beaten open to get beans.

Pods fed to cattle.

Leaf of cocoa shaped like pod—feather-veined.

Beans wrapped in leaves and allowed to ferment; then dried, packed, shipped.

Product of beans—cocoa, cocoa-butter, chocolate.

**Topic D—Ford Educational Film.**

Note: Topic C is one reel of a series of three reels on South America. Grades seeing these reels had a comprehensive three weeks' study of this country.

One feature of our work which deserves a little more than passing attention is the co-operation existing between the public library and the Bureau of Visual Instruction.

A "motion picture reference shelf" has been established in a corner of the children's room of the public library. Here pupils may find much pertinent material in the form of books and magazines which have been conveniently marked for the purpose of ready reference.

The librarian is supplied in advance with copies of our Motion Picture program—outlines which give her an opportunity to stock the "reference shelf" with literature that suitably illustrates the film topics.

A bulletin board placed above the shelf displays a bibliography of the material selected and acts as a guide for the pupils in their study.

Two such bibliographies are here presented.

#### ROYAL GORGE.

- Pearsons, E.—Guide Book to Colorado, p. 119-120.  
Steele, D. M.—Going abroad overland, p. 144-147.

#### ELK AND DEER.

- Wright—Four-footed Americans, p. 302, 304-308.

#### PERU.

- Bowman—South America, p. 84-127.  
Miller—In the wilds of South America, p. 265-278.

#### Callao.

- Bowman—South America, p. 104.

#### Callao to Lima.

- Peck—South American tour, Chaps. 6 and 8.

#### Lima.

- Bowman—South America, 105-108.

#### Incas.

- Book of History, v. 14, p. 5861-5874.  
Bowman—South America, p. 161-175.

#### Simon Bolivar.

- Book of History, v. 14, p. 5964-5969.

#### SHEEP.

- Allen, N. B.—Sheep and wool industry in industrial studies: United States, p. 233-42.  
American Woolen Co.—From wool to cloth.  
Austin, M. H.—The flock.  
Carpenter, F. G.—Sheep and wool in Australia: In Australia, p. 24-34.  
Johonnot, J.—How the sheep looks and lives. In Book of cats and dogs, p. 87-90.  
Johonnot, J.—Wool bearers of the pastures. In Neighbors with claws and hoofs, p. 184-90.  
Shillig, E. E.—Wool. In The Four Wonders, p. 37-64.  
Tappan, E. M.—Ways of the sheep. In Farmer and his friends, p. 72-78.  
Wright, M. O.—Bighorns. In Four-footed Americans, p. 243-5.  
U. S. Dept. of Agriculture, Bulletin 94.

#### Stories.

- Hamp, S. F.—Dale and Fraser, sheepmen.  
Pierson, C. D.—Lamb with the longest tail; Why the sheep ran away. In Among the farmyard people.  
Twombly & Dana—Sheep shearing. In Romance of labor, p. 201-210.

The question of the teachers' attitude toward the pictures may be answered by presenting excerpts of letters.

#### *From an eighth grade teacher*

"The movies are very valuable in the teaching of Geography and History as co-operation has made it possible to have films given that fitted into our work by making of lists of topics ahead of time. The pictures seemed to be as valuable when given after the lessons as before or at the same time, as then they constituted a very pleasant form of review, and the comments of the children showed they enjoyed them as such. Often very good comparisons were drawn. They developed observation and several boys told me that having them in school had taught them to be far more observing when attending other movies and to utilize the information they received."

#### *From a seventh and eighth grade Geography teacher*

"If presented before the topic is studied, it forms a good working basis and adds much interest. Example—About ten days ago a film showing many mountain views in California was shown and yesterday my seventh grade, in

giving their description of Yosemite Park, made use of the knowledge gained and named the various pictures shown that day (rather remarkable, as they were not named on the film at all). The children are continually making allusions to some process, view, etc., seen in the movies (perhaps last fall) and connecting it with their daily work. In recitation you'll sometimes hear, "You saw that point explained in the movies," when a child asks the one reciting a question and the others will nod emphatically, thus attention is taught to some careless pupils.

"If shown after topic is studied, the pictures prove a valuable source of review."

*From a fifth grade teacher*

"Pictures are almost the only means many children have of gaining a knowledge of the topography of a country. Few of our pupils have had the opportunity to travel, and moving pictures stimulate their interest in a subject and induce them to do more research work.

"Pictures of the different industries have been especially valuable to the pupils who are studying geography."

*From a third grade teacher*

"In my estimation there is great value in the motion pictures for the lower grades, when the pictures are adapted to the work and the work outlined in advance. The pictures can be used as a basis for the Nature work, given in a more interesting and clearer manner than is possible in merely reading or trying to find one's own material.

"The pictures are an excellent device in beginning composition work in the lower grades. The pictures form a splendid foundation for visualizing Geography which will be studied in a higher grade."

*From a first grade teacher*

"I have been amazed this year at the direct help the movies have given us.

"The types which have helped us most are the nature pictures and the fairy story types. Moving pictures have brought to us things we need in our work in the way of illustrative materials which it would be impossible for us all to go and see. For instance, today we had a song about geese building their nests by a reedy lake and if it hadn't been for our last movie we wouldn't have had so easy a time understanding what a reedy lake was. And so it is almost daily, some reference in our work is given to some animal or story we have seen on the screen.

"Children at this age (primary grades) are so very eye-minded that we have wonderful help in observation.

"Then, too, movies give us much material for independent seat work. Much free hand cutting can be done.



A MOTION PICTURE CLASS IN AN EVANSTON SCHOOL

"The joy which the movies give us is inestimable. The pictures are so well chosen that they are within the comprehension of the children.

"The outlines have been a great help in bringing the messages to the parents of what is going on at the movies."

Pupils were recently asked to write a short, one-page composition concerning our "movies." They were given no ideas or suggestions upon what to write. Several representative selections are presented:

Elizabeth P.—"I think the movies have helped us a great deal. Our knowledge of the manufacture of things we see in the home is much larger. We can remember how things were made if we see them made. We can't remember so well if we read about it.

"The pictures of places we know about but have not seen give us a very much better idea of the people and country the pictures are about.

"Therefore I would like to have the movies continued."

Laura C.—"I have received information from the school movie which is very valuable to know.

"I have learned a lot of another world, a world of insects, animals and birds.

"Before I saw the movies here at Lincolnwood I knew almost nothing of the outside world.

"I have learned things that will be of value in future years as well as now.

"Our mothers and fathers have also become interested in these films and have attended a great many. I hope that this movie will be used in the school right along."

Marjorie G.—“The trap-door spider makes a hole in the ground and lines it with silk. It has a hinged lid which fills the opening of the hole. There are two little holes in the edge of the lid farthest from the hinge.

“When the spider enters its nest it runs over the door and, catching the claws of its hind leg into these holes, it pulls the door shut after it.”

Two themes are given below in full to illustrate further the stimulating effect of the screen. Hazel, aged 11, 6th grade, is deeply impressed by the mental nourishment derived; while Maurice, aged 11, 5th grade, is moved to pictorial utterance as well as verbal. Maurice's interesting spelling of “noise” is an unconscious mark of loyalty to his home and school in Evanston, where Noyes street and the Noyes School are easily dominant in his mind over all other noises.

#### THEME No. 1.


By Hazel.

The Soo Canal is situated between Lake Superior and Lake Huron, in the St. Marys River. It is named after the city Sault Ste. Marie. The St. Marys River has a great many rapids. So the people that lived around there built this very large canal. Since they built this canal there has been a great deal of transportation going on there. If something happened to the locks of the Soo Canal, it would stop all transportation between Lake Superior and Lake Huron.

This film was most interesting to me because I have never known much about the Soo Canal. And just from that one film my head was filled. If the Soo Canal was not there the northwestern part of the Western States would not be half as important as it is now. It is one of the most important places in the United States. And I think the Soo Canal is going to grow even more.

#### THEME No. 2.

By Maurice.

 HE Western States have many wonders. Its mountains are most noted. The film of “A Little Bit of Heaven.” It showed

a great many of the wonders. You would leave here in a train

and go west to a small town



near the Yosemite Valley, or in it. When you leave the

station you would go for a horse

at a nearby stable. Then you are off to the



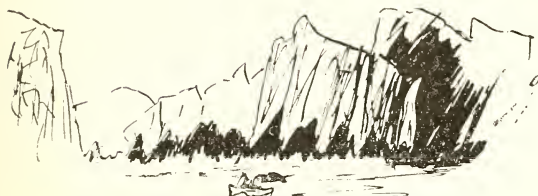


wonders away from the street noises.

But there is another



noises. It is the water falls which are bordered with lofty



precipices of

granite, and

pine trees galore.

There are boulders half as tall as a man.

Some are so close together

that a horse can't get through.



There are places where you can stand out on a river

above a fall on the rocks.

Let it be stated in conclusion that the end for which we are striving is to make the Motion Picture a real factor in the education of the child. He grows intellectually in proportion as he increases his power of thought and expression. To gain this end we give the child, not a passive viewing of the picture, but a presentation which will be of definite informational and thought-producing value. We try to accomplish this by giving opportunity for

(1) *Active study.* (Guiding the pupil to look for the significant thing while undertaking a preparatory study of our outline.)

(2) *Thoughtful consideration.* (Conducting socialized class-room discussions and reports on topics assigned.)

(3) *Careful observation.* (Silence is preserved during the showing of the film to permit complete concentrating upon the picture. Close attention is further encouraged by the pupil's knowledge that he may be asked at any time to write a theme upon the picture he has seen.)

W. ARTHUR JUSTICE,  
Director of Visual Instruction, Public Schools,  
Evanston, Ill.

## First Steps in the Study of Geography.

**T**HE little child comes unconsciously to the study of geography. The simple observations made in play about the home, or in the fields may be the very first lessons. His personal experience on the seashore, in exploring a ravine, with various types of weather, in watching the rising or setting of the sun, or in observing the moon and stars, his experience in travel or at a store—all form the basis for later studies in geography. As he comes to know of the occupations in the home, on the farm or in the city, he is laying the foundations for the study of geography.

By some, these first lessons might be called nature studies, but there is no sharp line to be drawn between nature study and geography; in fact, most of the lessons in what is called nature study with children are a legitimate part of a course in geography. In schools where work in geography is outlined for all grades from the first to the eighth, inclusive, the work for the first three years is commonly based on the observation of natural phenomena. Thus, during the first eight or nine years of a child's life, he is rapidly acquiring a knowledge of the earth and of some of the people of the earth that should form the basis of the first more formal lessons in geography.

In most American schools home geography is taken up in the fourth grade. That geography should include, in addition to a study of the home and its immediate surroundings, the study of the natural region in which the home is located. In this way the home will be seen in a certain natural setting. A vivid picture of the life throughout that region should be built up in the child's mind. This first large picture built up in the study of geography is based chiefly upon the personal observations and experiences of the child. These personal observations and experiences may, of course, be supplemented by those of the other children in the class, or by those of the teacher. They can be supplemented very effectively by the study of pictures, lantern slides and industrial exhibits. Anything which illustrates the physical features, the climate, the natural resources, or the activities of the people living in that natural region may be used to enrich the image in the child's mind. In all of this work the teaching should be done through the eye.

By means of imaginary journeys, the child should visit the homes of many different people. This will lead him to the study of various natural regions where the life is controlled by very different geographic conditions. Regions should be selected where the physical features, climate and resources are distinctly different from those at home. A visit to an Eskimo home might be chosen, and the child should live with the Eskimos, in imagination, a summer and a winter. Pictures, drawings, maps and museum exhibits should be used to make the mental pictures that are being fixed in the child's mind as accurate and vivid as possible. Illustrative material is absolutely essential. The most effective instruction will be through the eye. It is doubtful if any amount of descriptive language alone can fix in the mind of a child, who has always lived in the temperate zone, a correct image of an Eskimo home, of the Eskimos caring for their reindeer herds or



engaged in fishing, or of the Eskimo children in the modern schools that our Government has established in Alaska.

If a truthful and characteristic motion picture film were available, it would teach more in a few minutes than any other illustrative material, and would serve as the basis for numerous discussions. It might suggest the construction of a model of an Eskimo home, or a miniature Eskimo boat, or the making of clothing like that of an Eskimo. If a group of children chose to take up the construction of a miniature Eskimo village, preparing it somewhat as the museum curators would prepare a habitat group, that work would call for careful study, for reading, and perhaps for the help of parents. The whole exercise would be educative, and probably as valuable for those at home as for those going to school. In the end, this group of children might succeed in preparing an exhibit of more than temporary value, at least one that could be loaned to other rooms in the school, or to other schools, so that it would serve a useful purpose beyond that of training those engaged in its construction.

Geography must be made vivid. It should be made dramatic. It would be appropriate for the children, while studying the homes of people in the Far North, to enact before another room in the school some scene illustrating the life of the people they have been studying.

Turn next to the life in a hot desert region. Make an imaginary journey to the Sahara. The route should be shown on a globe and on a flat map; the child should follow that route in imagination and describe what he sees. The outfitting of a caravan at some trading post on the margin of the desert should be pictured. Nothing can do this so well as a motion picture film. The party then travels across the desert, through great sand dune areas, by bare rocky mountains, meets a group of Arab traders on the way, and in time approaches an oasis. The oasis, with its beautiful palm trees, presents an entirely new habitat for study. Lantern slides, pictures, products from that country, or a visit to a museum will help to build up a vivid picture of this home in the mind of the child. This visit should be continued throughout a year, so that the life of the people at various seasons may be understood.

Again the motion picture film would be an ideal way to illustrate this life. The people should be seen at work. Their activities are the things in which we are interested. Their everyday costumes and their dress on special occasions should be depicted.

The study of an oasis might arouse in another group of children the desire to construct a model of an oasis in the Sahara, to costume miniature forms that represent the people, and perhaps to construct a miniature caravan. That work would call for genuine research from all the sources available at school and at home. The little child is a natural research student and that investigative spirit must be kept alive; it should be cultivated, guided and trained so that it may become an asset throughout his life.

Visit next a home in a tropical forest where there is luxuriant vegetation. This may lead to a journey up the Amazon. Stop at the mouth of the river and visit the city of Belem (Pará) which is almost at the equator, and watch

the sun at the time of our equinox when it rises in the east, passes overhead at noon and sets in the west. On each imaginary journey plan to call attention to the great differences in climate. Little by little, by experiences that are as nearly like those they would have in actual travel as we can make them, the child will accumulate concepts that are essential to the further study of geography. These individual clear concepts will be the basis in later study for a scientific understanding of geography.

Later, go among people living in a high mountainous country or to people on the coast. Include a visit to the island dwellers, like those in Samoa or Hawaii, or spend a year, in imagination, with the Japanese or Chinese, coming back at last to a prosperous American farm. Finish with an enthusiastic study of life in our own country, not forgetting the play and recreation of those who must be engaged for a good part of the time in the cultivation of the fields or in the harvesting of crops.

The possibilities of sound educational work in visiting one after another of these distinctly different types of homes are indeed remarkable. This kind of work could well serve as the basis for a year's course of study in geography with children in the third or fourth grade.

Toward the end of the year, an international carnival might be held, with the children impersonating in costume the people of the various nations they have visited. Close this carnival with a review of the motion picture films used in the study of the several homes. Geography would then become a live subject, the most alive of any subject in the elementary school curriculum. These first lessons are a study of homes and of the geographic conditions surrounding them.

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*Professor of Physiography,*  
*Harvard University.*

# Human Eyes and Optical Instruments.

EDITOR'S NOTE—This article is the first of a series by Dr. Moulton on Human Eyes and Optical Instruments. The one published in this issue is limited to a consideration of eyes without optical aid. Later ones will take up the whole range of ordinary optical instruments and illustrations will be given of the wonders which they reveal.

THE higher forms of animals possess five senses through which they have contact with the external world. The relative importance of these senses varies from one species to another. In the case of human beings the most valuable sense is undoubtedly that of sight, and the eyes of men are probably better than those of any other animal.

Although we human beings learn of the exterior world through all of our senses, we do not get the same amount or exactly the same kind of information from all of them. We learn more through our eyes than through any other sense organs. If it were not so, the impressions we retain after traveling in unfamiliar regions would not be so largely visual. If it were not so, we should not invariably say we had *seen* a country rather than that we had sensed it in some other way. An additional fact of importance is that our eyes give us information that can be obtained otherwise only with difficulty or not at all. For example, nearly all we know of the size and shape of objects comes from having seen them, especially if they are beyond the reach of our hands; and absolutely all we know of the planets and the millions of stars in the universe beyond this little earth on which we live has been learned through the sense of sight. The importance of this may be judged from the fact that it was from observations of these bodies that the fundamental and very important laws of mechanics were discovered; and, indeed, from the fact that the safe navigation of the seas and the accurate determination of time are even now dependent upon daily astronomical observations. It is, of course, through our eyes alone that we learn of the colors of objects; that we judge of the progress of ripening fruit or grain; that we note the glow of health in the cheek, and that we are thrilled by the rainbow's spectrum or the tints of the evening sky. But this, which pertains to the natural eye, is not all, for no other sense has benefited so much from artificial and instrumental aid. If our eyes are defective, glasses will generally correct them. If they fail in accommodation with age, suitable lenses will overcome the difficulty. If they do not gather enough light to enable us to see faint or far distant objects, telescopes will bring them within our view. If they can not discern very minute objects, microscopes will magnify them. If glimpses of things are fleeting, photographs will preserve them. If bodies seem flat in pictures, stereoscopic views will give them the appearance of solidity. If objects appear stationary in pictures, moving pictures will show them in action. In short, the ordinary defects of the eyes can be remedied, the infinite and the infinitesimal can both be brought into range, the scenes of all times and places can be preserved in three dimensions and in motion—indeed, the universe, in both space and time, can be brought to us here and now.

But it is not necessary to argue the actual and relative importance of the sense of sight. It is irrefutably established by the very idioms and imagery

of language. We often say that we "see through" a thing instead of asserting that we understand it; our "foresight" means our foreknowledge; if a proposition seems to be favorable we declare it "looks good"; to say nothing of numerous expressions such as "look me up," "I'll see you later," "seeing is believing," "au revoir" and "auf wiedersehen."

The human eye is an organ whose essential optical parts are shown in axial section in Fig. 1. When light enters the eye it passes, in order, through the transparent membrane *c*, known as the cornea; the chamber *a*, filled with the aqueous humor; the crystalline lens *l*; and the chamber *v*, filled with the vitreous humor; and it finally falls upon the retina *r*.

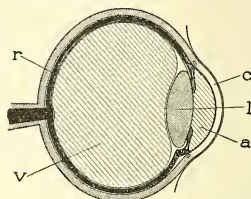


FIGURE 1

The eye is much like a camera, with which nearly everyone is somewhat familiar. The lens of the eye corresponds to the lens of the camera, and the retina corresponds to the photographic plate. The analogy goes still further, for, just as a camera is provided with a diaphragm by means of which the amount of light which enters it may be controlled, so the eye has the iris which regulates the amount of light that falls upon the retina. The pupil is simply the aperture through the iris.

If it were not for the lens of the eye, light from every visible part of an object would be scattered over the whole retina and no definite outlines of anything would be observed. The function of the lens is to bring to a focus on the

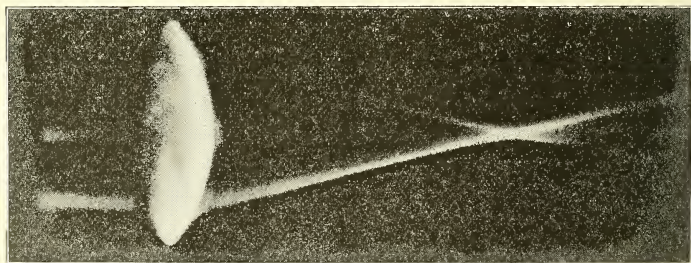


FIGURE 2

retina all the rays of light which enter the eye from a given point on an object. Fig. 2 is a photograph of three initially parallel rays which pass through a lens. It is seen that the direction of the central one is not changed, while the other two are bent, or refracted, by the lens and intersect the central ray at the same point. In the case of an ideally perfect lens all the rays parallel to the central ray would intersect it at the same focus. The case of initially parallel rays is that in which the object is at a very great distance. If the object were

near, the rays from any point on it would diverge somewhat as they entered the lens, and in this case also they would be brought to a focus after passing through it but at a greater distance from it than in the case of the very remote object.

Figure 3 shows how the lens  $L$  forms an image of the object  $AB$  upon the surface  $S$ . Every ray from  $A$  is brought to a focus at  $a$ , the direction of the ray which passes through the center of  $L$  being unchanged. Similarly, every ray from  $B$  is brought to a focus at  $b$  and the direction of the ray through the center of  $L$  is unchanged. The image of  $AB$  is inverted. Its size depends upon the angle between the central rays and is proportional to the distance from  $L$  to  $S$ . If the lens  $L$  were too convex or too dense, the rays from  $A$  would be brought to a focus before they reached  $S$ ; they would cross at a focal point, and, diverging again, they would fall upon  $S$  in a small circle. The result would be similar for rays from every other point of  $AB$ . The small circles would overlap and no sharp image would be obtained. If  $L$  were too flat or of too low density, the rays from  $AB$  would converge toward a focus beyond  $S$ . The result in this

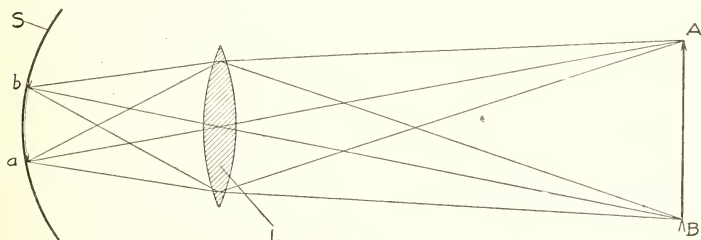


FIGURE 3

case also would be a series of overlapping circles with the result that there would be no sharp images.

The foregoing is a brief outline of the method of formation of optical images by simple refracting lenses, but a number of qualifications must be made. In the first place, if the surfaces of  $L$  were sectors of perfect spheres and if  $L$  were of the same density throughout, the rays from a point of  $AB$  would not all be brought to an exact point on  $S$ . Those which passed through the margin of  $L$  would be brought to a focus nearest the lens. But if the first surface of  $L$  were less convex than the second, then this error, known as spherical aberration, would not be so serious as it would be otherwise. The lens of the eye satisfies this condition for small spherical aberration because its first surface is less convex than the second. If the center of the lens were denser than the marginal parts, a condition that can not be secured in artificial lenses, the spherical aberration would also be reduced. It is a remarkable fact that the central part of the lens of the eye actually is denser than the outer parts. For these reasons the normal eye has only small and unimportant defects of this type.

In case of a fixed lens  $L$ , the nearer the object  $AB$  is to  $L$  the more distant is its image  $ab$ . In the case of the camera, the nearer the object the more the



photographic plate and the objective lens must be separated. The adjustment in the case of the eye is made otherwise in an extraordinary way. With the approach of the object the muscles of the eye contract in such a manner as to render the lens more convex, and the consequence of this is that it is not necessary that the distance from the lens to the retina should be increased. Everyone has noticed that he must focus, or accommodate, his eyes according to the distance of the object at which he is looking. With advancing years, the muscles of the eye lose some of their elasticity, the power of accommodation diminishes, and glasses must be used for reading and seeing objects at short distances.

The amount of light which passes through the lens *L* depends upon its size (is proportional to the square of its diameter) and the luminosity of the object. The more luminous the object the smaller the lens required to admit a given amount of light. In the case of the camera the aperture is controlled by means of the diaphragm. In the case of the eye, the aperture, or pupil, is automatically regulated by the iris. When the pupil is dilated for seeing objects in comparative darkness, it admits more than ten times as much light as it does when it is contracted under the stimulus of strong sunlight. Moreover, the light which enters the eye may be still further reduced by squinting so as to interpose the eye lashes and to produce a shade by the eye brows.

There is still another defect of lenses known as chromatic (color) aberration. A perfect lens does not bring parallel rays of different colors to a focus at the same point. Of the rays which are visible to the human eye, the violet and blue are brought to a focus nearest the lens and the red at the greatest distance. In the case of optical instruments, such as cameras and telescopes, chromatic aberration is largely overcome by suitable combinations of convex and concave lenses having different optical properties. In the case of eyes this defect is in no way remedied. This is the most important and about the only respect in which the optician's art is superior to nature's product. It is true that we are seldom conscious of this defect because it is always with us. Nearly everyone has noticed that it is fatiguing to read blue and red letters mixed, or even to read blue letters on a red background. The reason is that the eyes are not in focus for both colors at once. We are accustomed to judge the distances of objects partly by the muscular effort required to focus upon them. As a consequence both of this habit and of the chromatic aberration to which the eye is subject, objects at a given distance which are red appear to be nearer than those which are violet or blue.

It should not be inferred from the foregoing statements that the human eye is not a very remarkable optical instrument. It is so nearly perfect that if two points are at such a distance from the eye and from each other that their images on the retina are separated by as much as one twelve hundredth of an inch, they are seen as separate objects. On a portion of the retina having an area of only a fraction of a square inch, the details of a great landscape may be so accurately imaged that all of its numerous features may be clearly discerned.

The direction of the eye is controlled and may be changed by six muscles which are attached to its exterior. One pair of muscles produces horizontal

motion to the right or left; two pairs are used to produce a motion upward or downward; and all three pairs are necessary to secure any oblique motion, as upward and outward. Usually the two eyes move so that their axes remain either parallel or inclined to each other at a constant angle. The axes of the two eyes are normally so directed that they point toward the object which at the instant is the center of interest. If it is remote, the axes are sensibly parallel; if it is near, they converge toward it. If the attention is changed from a remote object to a near one, the relation of the axes of the eyes must be correspondingly altered. The muscles which control the directions of the eyes automatically produce precisely this adjustment, and from it we also estimate the distances of objects.

As has been stated, the axes of the eyes are directed toward the object which is the chief center of visual attention. This is necessary in order that the images of the object shall fall on corresponding parts of the retinas of the two eyes. If they should fall on parts which do not correspond the object would appear to be double. This can be shown to be true by looking at an object and then displacing one of the eye balls out of position by gentle pressure.

There is a certain yellow spot near the center of the retina which is most sensitive both to light and to color. In looking at an object the eyes are so directed that its images fall on these yellow spots. But there are many other objects which are less distinctly within the field of view. Consider one which is to the right of the object of chief interest. Its image in the eye will be formed on the retina at the point at which a straight line from it through the center of the lens strikes the retina. In the case of the right eye, this point will be on the side of the yellow spot toward the nose; and in the case of the left eye, it will be on the side of the yellow spot away from the nose. Now, in order that the object may not be seen double the points on the two retinas must correspond, and if the object is at the right distance from the eyes they do correspond. That is, the part of the retina of one eye on the side of the yellow spot toward the nose corresponds, for visual purposes, with the part of the retina of the other eye on the side of the yellow spot away from the nose, and conversely. However, structurally the parts of the retinas toward the nose in the two eyes correspond. On the other hand, the upper and lower parts of the retina of one eye correspond respectively to the upper and lower parts of the retina of the other, both visually and structurally. It can be seen from these statements that seeing the same objects simultaneously with two eyes presents some interesting questions which do not arise in connection with optical instruments.

There is an insensitive, or so-called blind, spot on the retina where the optic nerve leads out from it to the brain. It is on the side of the yellow spot toward the nose. In order to prove its existence make two smaller circular patches on a piece of paper about four inches apart. Place them so that the line joining them is parallel to the line joining the eyes. Then close the left eye and look at the left hand spot with the right eye, and shift the paper slowly back and forth to about reading distance. At a certain distance the image of the right hand spot will fall on the blind spot of the retina and it will be invisible. But its image



will not fall at the same time on the blind spot of the left eye, and when both eyes are used together there is no invisible position for an object within the whole field of vision.

There are many analogies between the eye and a camera and, as has been stated, the retina corresponds to the sensitive plate. But in the case of the retina and the sensitive plate the differences are profound. The sensitive plate is simple; the retina is very complex. The photographic plate is coated simply with an emulsion of gelatin and a compound of silver which has the property of undergoing certain chemical changes when it is exposed to light. The lens throws an image of the object at which it is pointed on to the plate, and the silver compound of the parts thus exposed turns dark upon treatment with suitable chemical reagents. The remainder is washed away before the plate is taken into the open. On the other hand, the retina is a highly complex structure consisting of nine layers of nerve cells, nerve fibers, blood vessels, granules, and rods and cones. When light falls upon the retina chemical, and possibly physical, reactions take place with resulting stimulus of the optic nerve and corresponding impressions on the brain.

Only one picture can be obtained on a photographic plate, because when the silver compound has once been darkened the result is permanent. But the effect of light on the retina soon disappears, and one image can succeed another in an almost endless series. In one respect this is an immense advantage, and in another a disadvantage, as compared with the photographic plate. The advantage is obvious. The disadvantage arises from the fact that the stimulus to the optic nerve produced by an image on the retina does not increase with time. If, for example, an object is too faint to be visible in the first few seconds it can not be seen at all. On the contrary, the effects of a faint light on a photographic plate are proportional to the time of exposure. If a few seconds do not give a strong enough image, the exposure may be continued for a few minutes, or even a few hours. In celestial photography such long exposures are often made, and photographs are obtained of objects which are so faint that they are far beyond the reach of the eye even with the aid of the greatest telescopes. The photographic plate distinguishes among colors only by the fact that it is more sensitive to some than to others. The retina, however, is differently affected by different colors. Thomas Young and, later, Helmholtz explained color perception by the theory that the retina contains three kinds of nerve fibers which are sensitive particularly to three kinds of light, namely, violet, green, and red, while being relatively insensitive to the others. This theory, however, does not explain all the facts, and it has been replaced by one due to Hering. According to Hering the retina contains three kinds of substances, each of which is acted on by one kind of light in one way and by another kind of light in the opposite way. Such pairs of colors are complementary, and when they strike the retina at the same time they produce the effect of grey light. These three pairs of oppositely acting colors are white and black, blue and yellow, and green and red. Other colors may be obtained by mixtures of these colors, though they also exist independently. Indeed, as has been stated, there are rays similar to light whose waves are either

shorter than the violet or longer than the red. The eyes of other animals may possibly be sensitive to some of the rays which are invisible to human eyes.

It was stated at the beginning of this article that men have better eyes than any other animals. The most primitive forms of life, having no nervous systems, have no sense of sight whatever. But the lowly *Medusae* and *Annelidae* have eye-specks, which are simply slight expansions of optic nerve filaments covered with a transparent membrane, but these first approximations to eyes have no image-forming lenses. They are sensitive to light but do not respond to light stimuli much more effectively than heliotropic plants. Further up the scale of life the insects and *Crustaceans* are found to have compound eyes, which con-



**Incorrect Way to Use Artificial Light—Strong Light Directly in the Eyes  
and Feeble Light on the Book**

sist essentially of a number of cone-like bodies whose vertices are united at the end of optic nerve filaments and whose bases spread out fan-like on the inner surface of a sort of cornea. Since each cone is distinct from all the others it is affected only by those rays which enter along the line of its axis. The visual field depends upon the sector of the sphere covered by the bases of these cones. In some of the insects nearly the whole sphere is covered; in others, only a small part of it. Finally, at the top of the scale of animal life the vertebrates have eyes which in all essentials are similar to those of men.

It is not to be understood that the eyes of all the vertebrates are as good as those of men. It is highly probable that they are not. Wild game is notoriously defective in eye-sight, though often having very acute hearing and amazingly

sensitive olfactory nerves. It is the same with domestic animals. The ears of a horse or a dog, rather than his eyes, express his emotions.

One might suspect by analogy with the foregoing facts that the most civilized races of men have the best eyes. Such appears to be the case, though the evidence is not conclusive. The writer has tested the ability of Indians and low-caste Mexicans both to see very faint objects and also to see as separate points two objects which were apparently very close together. Most of these tests were on the stars. He has also tested many white people. The Indians and Mexicans had whatever advantage there may have been because of some familiarity with the objects, for they are much better acquainted with the stars than most white people are. Nevertheless, it was found that not only were their best eyes inferior in both respects to the best eyes of white people, but also their eyes averaged much less nearly perfect. The name given by the keen-eyed Arabs to the little star near the larger one at the bend of the handle of the Big Dipper, was Alcor (the test), although it is easily seen by anyone whose eyes are anywhere nearly normal; and although these Arabs were for some centuries the leading astronomers of the world and made extensive catalogs of the stars, they failed to see a number of objects that are visible to half of present-day university students.

Partisans of Visual Education might suggest that the most intelligent species of animals owe their intellectual position to their superior powers of sight. Is it not probable, rather, that in a general way the evolutions of the central nervous system and the various sense organs have kept pace with each other, and that one sense or another has become most highly developed in a species according to its environment and the demands of its life? We are probably correct in picturing to ourselves the remote ancestors of the present highest forms of life as lowly creatures, living in the slime of far-off geologic ages. Day after day, with rhythmic periodicity, the sun stimulated their rudimentary eye-specks, and through them their central nervous systems. The ebb and flow of tides and the daily variations in temperature also prevented their life processes from descending to a dull uniformity. As a consequence of the stimuli from without and the inherent potentialities of the matter of which they were composed, they developed through millions of years into the forms that exist on the earth today. The senses of animals of all types more or less perfectly meet their needs. Rudimentary eyes are sufficient for the lower forms. In caves certain *Arachnidae*, and, in both caves and the deep sea, even fishes have either no eyes at all or only useless ones. The eyes of fishes in shallow water have lenses of a convexity exactly adapted to such a medium. The pupils of the eyes of herbivorous animals are elongated horizontally, and a result of this is that they can focus most sharply on vertical lines such as grasses present. On the other hand, the pupils of the eyes of cats and other carnivorous animals are longest in the vertical direction, and a result of this is that they can focus most sharply on things darting to the right or left. Man needs better eyes than other animals to meet the requirements of his life, and he has them. The demands have enormously increased in the last few generations, particularly because of the developments in printing, strong artificial lights, and rapid locomotion. Apparently our eyes are meeting

all the new demands, and there is no reason to suppose that they may not improve as much in the future of the race as they have in the past, especially if men shall consciously direct their own evolution and avoid or remove unfavorable conditions.

Human eyes are not always perfect. Sometimes the muscles which control their movements are not balanced and the person is cross-eyed or has some other abnormality in the muscular control of his eyes. Some of the fibres of the muscles should be clipped to restore the balance. The lens of the eye may be



**Correct Way to Use Artificial Light—Strong Illumination Obliquely on the Book and None Directly in the Eyes**

too convex with the result that the person is near sighted. The defect should be remedied by wearing concave glasses. The curvature of the lens in one direction may be different from that in another direction with the result that the person has astigmatism. The defect should be corrected by cylindrical lenses. All such imperfections of refraction can be remedied by suitable glasses.

A word remains to be said regarding the illumination which should be employed. As a rule people do not use anywhere nearly enough illumination for such work as reading. Our ancestors for a million generations used only sunlight and our eyes are adapted to such illumination as the sun gives. Sunlight is very intense, being equivalent, when direct, to sixty thousand candle power at the distance of a yard. Compared to it all ordinary lights are insignificant. A street



lamp appears ridiculously feeble in the day time. Full moon light is not to be despised and one can read by it, but sun light is six hundred thousand times brighter. One would expect from these considerations that bright illumination would be advisable.

Illuminating engineers recommend light equivalent to from six to ten candle power at a distance of one foot. School rooms are very often illuminated far below the minimum of these figures. Likewise, artificial light usually does not measure up to them. If a book or paper is held at a distance of only four feet from the source of light, the candle power of the source should be from ninety-six to one hundred and sixty. Moreover, as everyone knows, the light should not fall directly into the eyes but obliquely on the page so that the reflection from the mirror-like paper will not strike the eyes.

F. R. MOULTON,

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*The University of Chicago.*

## The Fact of 1925.

A TEACHER of English who lives in the arcanum of Pedagogy, where minds respond to pretty schemes and theories, enjoys observing the market-place of Cinema, where minds respond only to facts. It was, for example, once a fact that every audience showed enthusiasm for a pie so thrown by one character as to distribute itself over the face of another character; movie-makers responded and produced a plentiful throwing of pies. Later it became a fact that pie-throwing caused little applause; the filmers promptly responded by discontinuing the hurling of pastry. They have always been willing to experiment with highbrow matter proposed by educators or with lowbrow ideas suggested by accident; but they have observed the resultant facts, never imagining that flat failure could be theorized into success. They have been able to maintain their industry only by reacting to the effects observable in an audience.

The ordinary educator has no such ability to respond to facts. His field of experiment is so divided and multiform, his results so much a matter of interpretative guess-work, that if he sets out with a hopeful theory he may mistake failure for success. He has no immediate and indisputable verdict to guide him. If, for instance, he tries out some program of "socialization" or of "joy in the work," and if ten schools under peculiar conditions report progress, he will judge the experiment a success; whereas in ninety other schools, under normal conditions, the program may be demonstrably a course of destruction. During the last thirty years educators have frequently been the victims of hallucination: witness such devices as "teach in the large," "let the pupil do the teaching," "there is no transfer of acquired abilities," "make the ninth-grade work consist largely of observing society at work." A mind trained in adjusting to facts would not have needed ten years to recognize such falsities and to abandon them.

If, then, a movie-maker is sensitive to facts, and if an educator is not sensitive, what is a movie educator going to be? He is a hybrid. One-half of him lives in one element, the other half in a very different medium. Will the whole of him breathe by the lungs of fact or through the gills of theory? Promoters of Visual Education must choose by which method they will live.

There are doubtless commercial possibilities in an appeal to vague hopefulness, to such a prophecy as this one uttered by the United States Department of Education before the World War: "Within the next decade the moving picture will be the indispensable adjunct of every teacher. . . . The future usefulness of the educational cinematograph bids fair to surpass the predictions of its most sanguine advocates." There are in the country hundreds of sanguine educators who will gladly boost this hope, acclaiming it from platforms and honestly fancying that they are heralding a bright era of pedagogic pleasure. They will be secure from the ridicule of old-fashioned teachers, because they can preface all their propaganda with the words of the most hard-headed of inventors, Edison: "I expect that moving pictures will take the place of most books below the ninth grade. . . . With the moving picture I can teach

reading, writing, spelling, geography, arithmetic and physiology. I can even teach history and some branches of science." Here is a vast field pointed out by a man whose wizard eye was never deluded by phantoms. Why not invest our millions, overrun the whole domain of grammar school, revolutionize education, build the gigantic pedagogic industry that Edison—the peerless, practical Edison—saw with unerring vision? Why not?

Perhaps Edison never made any such claims, but merely allowed an advertiser to use his name. It is conceivable that, even if he did so speak, he was for once in his life mistaken. Possibly his conception of a movie education was realizable by him, but not by any other human being. With these and similar speculations we need not spend time. This article is written to call attention to an entirely different sort of comment, to a fact, a fact a million times as large as any dictum of the world's premier inventor.

I refer to the eternal truth that effective education is always some kind of process that is hard for the pupil. Only once in human history, and in only one country, has this truth ever been obscured—that is, during the last forty years in the United States. For the first and last time in history a powerful nation has developed without being forced—as humanity has always been forced elsewhere—to be careful. Not even in education have we been obliged to follow that hard course of accuracy that all mankind has in all other ages been compelled to follow. Haste and inattention to details have almost been virtues. This prime cause, combined with more recent causes of another kind, have misled the unwary, blinding them to the fact that our latter-day, joy-riding, hopeful, visionary projects of easy ways to knowledge are in flat opposition to the universal truth about the road to learning: it must be hard. Greeks and Chinamen and Gauls and Pilgrim Fathers and Western Reserve pioneers—all have known this eternal fact. Milton said that "the path is laborious at the first ascent," and Dooley says that it must be "hard." The easy way to sound learning is a recent dream, credited by only a few, certain to be dissipated as soon as our country begins to adapt itself to the harsh realities that now loom directly before us as population thickens and the struggle for existence demands real education.

I am not speaking as a schoolmaster voicing his narrow convictions. I speak as one who feebly rehearses the deep oaths of hate that business men vent against our easy education. I write as one who reports what trade journals have to say of "the lame ducks from high school" that have been crippled by an easy education. I testify as one who hears all the air vocal with the rage of the great common people against the delusion and folly of "joy first and efficiency afterwards." If democracy is to survive, it must have a hard education. Most of us confess a faith that democracy is going to survive.

That is the fact of 1925 that confronts promoters of Visual Education. If they can side-step or tunnel under it, they may earn money for a time; they will go to ruin before long. Ten years ago there might have been a golden era of "see the pretty pictures and grow wise," but five years hence the fact will be "work hard or be scrapped." Can cameras be of use in developing the type of education that democracy now requires?



I don't know why not. For there is, paradoxically enough, an obverse to this fact of "hard." Though education must be essentially laborious, it is always the teacher's task to make the way as smooth as possible, to reduce grades, to discover easier approaches. The motion picture may be a valuable agent in making the hard road shorter, in bringing pupils sooner to what Milton promised after the first ascent: "so smooth, so green, so full of goodly prospect." Perhaps pictures can aid in conveying children more quickly to that goodly prospect where all sensible ideas are perceived as moving, human, useful realities. Even I, as I sit at a teacher's desk, can fancy a screen on which a hand writes "sep," pauses, attracts every mind to a moment of intent focusing on what follows, and then makes a big "A." Such a movie might teach effectively in thirty seconds what mere blackboard and chalk cannot teach in thirty days. The orthography of "separate" would be unforgettable through life. For aught I know there are a thousand other ways in which motion pictures might assist the teaching of literature and composition. The essence of good teaching is the vivid and unmistakable presentation of ideas; if cameras can be so manipulated as to help teachers in the hard climb up the laborious steep, may God speed the operators in their enterprise, endowing them with wisdom to know that no easy substitute can be contrived for all the hard work, giving them skill to cheer us all along the difficult road.

C. H. WARD,  
*The Taft School,*  
*Watertown, Conn.*

## A Word or Two More

The Epigram is a powerful and dangerous thing: powerful, because it carries home swiftly its brief and definite message—dangerous, because it may not be exactly true. Truth, like gold, is seldom found in a virgin state. It generally needs to undergo the refining process of careful qualification and precise definition. But the epigram inclines to be impatient of this process; loves to flash into the consciousness with all the glitter of universality upon it; prefers to state crisply, as a general truth, what should be told at greater length, but more accurately, as a particular truth.

Nevertheless there is undying charm in the epigram. The world has always loved it, as far back as we know the world. There is a fascination about tabloid thought. It requires so little thinking. It is pleasant to take because so easily and quickly done. Since it is so delectable a sweetmeat to the average palate of the race, the little epigram has done and can still do mighty things. It can wreck careers, ruin cities, and shatter empires—or it can carry individuals and nations to the pinnacles of achievement.

There is just now, for instance, an epigram afloat in the educational atmosphere of America that has been exerting a considerable influence for weal or woe on the minds of many a teacher. It is this.

*"The shortest path to the brain is through the eye."*

It was put forth—we avoid the word "created," for we fancy that "rehabili-

tated" would be more logical—several years ago by the wizard of modern invention himself. His name, coupled with the innate strength of the epigrammatic form, has given the remark a double power. It has been quoted uncounted times since and looms large in the consciousness of some teachers as the last word in pedagogy. We should like to agree at once with this estimate; it would be splendid economy if these ten words could replace the investigations of coming months. At present, however, we take refuge in the classic verdict of "important if true."

We do not know how many times the idea has been uttered in preceding centuries nor does the count particularly concern us here—though we should not like to see the laurels of priority stripped from Comenius and Pestalozzi, or even from the Greeks and Romans, in unceremonious fashion. But we should be interested to know how many in the educational profession today are thinking that the epigram means all that it seems to say. We fear that many most agreeable interpretations and corollaries are being drawn from it and accepted. For example, "Drop the books and bring on the pictures." "Open the child's eyes and make him a man." "Whatever gets through the eye is pre-digested food for the brain." "To show pictures is to educate," etc.

Wherever such interpretation is put upon this splendidly Edisonian phrase, there may follow pedagogic tragedy. One might say with equal conciseness, sonority and charm, "The shortest path to the biceps is through the skin"

—yet the hypodermic needle is not widely advocated as a muscle developer. All depends on what you want to do to the muscle. Equally, whether we should inject mental pabulum through the eye of a child or not depends on what it is going to do to the brain.

The ever convenient analogy of the camera will serve aptly to close this paragraph. To make valuable impressions on the photographic plate the rays *must* be sent through the lens. To make exactly the same kind of impression on the child mind, the eye is unquestionably the best path to follow. That much is known now. But, on the photographic plate, we desire and get only a purely visual impression—it would be unfortunate in the extreme if the negative were to attempt any ad-justive reaction upon the image presented. The absolute contrary is sought when educational material is flashed upon the child. If the little mind does *not* react—if it does not interpret, adjust, correlate, reflect, cerebrates—in short, *if the experience does not make the child think*, visual education will not educate and must ultimately take its place among the futile fads of history.

The primary task before us believers in visual instruction is to settle, scientifically and conclusively, this fundamental question. It is the *sine qua non* of further advance and is worthy of

the attention of the keenest minds of the educational realm.

\* \* \*

We are rash enough to hope that hundreds of those who receive this copy of Visual Education will follow their impulse and write to the editor their impressions. We are quite aware that this is inviting troubles, but every editor is entitled to have them.

What will be done with all these letters is hard to foretell. Every letter will be read, our reaction carefully noted, and whatever seems the logical thing to do about it will be done. All will, of course, be answered directly or indirectly. Many will be printed. The latter fate will usually be assigned because letters are interesting, learned, clever or critical. We shall welcome them all and shall give ample evidence of our appreciation.

Naturally the letters which must surely provoke instant and inevitable action on our part will be those beginning, "Enclosed please find—". Use the slip. It is easy to do if done quickly, without thinking over much about it and before ceasing to think at all. One Dollar is a small matter—much smaller indeed than ever before. Still it is enough to show your approval or your scepticism. In either case, you need to see Visual Education every month to justify or to correct that first impression.

THE EDITOR.

## Announcements

The unfortunate delay in the appearance of the January number of Visual Education will not affect the completeness of Volume I. All ten numbers will be issued during 1920. The magazine is scheduled to appear at a successively earlier date each month until the regular date—the fifth of the month—shall be reached.

The February number will contain articles by F. R. Moulton of the University of Chicago, W. F. Russell of the University of Iowa, L. T. Damon of Brown University, L. L. Thurstone of the Carnegie Institute of Technology, E. K. Fretwell of Columbia University, W. H. Dudley of the University of Wisconsin, and others. Two new departments will be added. The number of pages will be materially increased.

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## Notice to Advertisers

The decision to issue the January number of Visual Education without advertising has compelled us to hold over all copy now in our hands. The advertisers have been notified to this effect.

The increased size of the magazine, beginning with the February number, enables us to offer space for strictly educational advertising. Copy reaching us not later than March 3rd will be in time for printing in the February issue. Advertising rates sent upon request.

# VISUAL EDUCATION

A Magazine Devoted to the Cause of American Education

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Vol. I.

APRIL, 1920

No. 2

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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President  
FOREST R. MOULTON, Secretary

NELSON L. GREENE, Editor  
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# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

NELSON L. GREENE, Editor

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Volume I

APRIL, 1920

Number 2

## Notice

We have encountered some of the difficulties older magazines have recently experienced and the result is that this issue of VISUAL EDUCATION appears about one month later than the time it was expected that it would appear. The difficulties have been overcome, and future issues may be expected on time.

In view of the unavoidable delay, this number is called the April issue. Consequently only eight numbers will appear this year. The second volume will begin with January, 1921, and will contain ten numbers. There will be no loss as a consequence of this change in plans. Our readers will lose nothing, for all manuscript intended for publication will appear in due time. Our subscribers will lose nothing, for their subscriptions have been extended to include two additional numbers. Our advertisers will lose nothing for their advertisements will appear at the expected times.

## Editorial

The appeal to the eye was made to the Cave child and the process has been endlessly repeated with all the myriads who have succeeded him. The crude outline of the mastodon scratched on the cavern walls certainly conveyed information to the primitive eyes that viewed it. Intentionally or unintentionally, those walls were blackboards, that child the first experimental subject in visual instruction. That the artist was unaware of his teaching and the child unconscious of his tutelage changes not their primacy in the long history of pedagogy.

The greater part of education, now as then, is not deliberate or intentional. It is a slow process, but constant and inevitable. Every conscious moment, from the first cry to the last breath, performs its share in working the final miracle, the development of an individual personality. Every experience modifies, develops, educates the rational being that receives it. Experiences can come only through the senses and the visual sense is admittedly the most constantly used. If man, then, derives all material for growth solely through his senses, he owes the greater part of his present personality to his eyes. Therefore, belief in visual education is merely an acknowledgment of the supremacy of our supreme faculty. Natural education uses it to the full. Formal education must do the same.

TIME was—and but a very few years ago—when the worth of a pageant was considered to lie chiefly in its advertising value to the interests presenting it, such as schools, communities, social organizations or industrial societies. Alumni and alumnae, patrons and friends, were thoroughly circularized in advance, with the delicate suggestion that they “tell others.” Slips, in assorted colors, were inserted in all outgoing mail and flung to the four corners of the postal zone, informing the world of the epochal step to be taken by said institution in producing a *pageant*.

Now pageants are common throughout the country. Mere novelty no longer justifies their production. A skeleton framework of mediocre English is no longer adequate for the text. Odds and ends of colored cloth, selected from family trunks and wardrobes and spliced together according to the varying tastes of individual participants, do not suffice for the costuming. The herding of many people across a stage is not necessarily “action.” There must be intellectual content, dramatic quality and artistic finish harmoniously blended throughout the whole, if the performance is to merit the name of pageant.

Centuries ago Pageantry was considered and treated as an art. It is again coming to be recognized as such, and many indications give promise that we shall soon be deriving from it once more the cultural values that so greatly enriched the Middle Ages, both intellectually and esthetically.

VISUAL EDUCATION is interested in Pageantry. In this issue we are starting a department for its use and are soon to have the pleasure of printing definitive articles on the subject by experts in the field.

\* \* \*

Hundreds of progressive schools throughout the country have succeeded in getting projection equipment installed, only to find endless difficulty in securing material worth projecting. (Increased trouble is the pioneer’s normal reward.) There are some of these schools, we suppose, who have *not* written us asking help—but we are receiving daily what sounds like an universal chorus of requests for information that will inform. These schools find, as we have found innumerable times, that the chief thing obtainable from commercial companies’ lists of “educational” is fond hope and keen disappointment.

It is our apparent duty to tackle this job, and we accept gladly. The thing shall be done, but how soon or how well are questions still on the knees of the gods. To help our inquiring friends curb their impatience we would ask them to remember two things: first, it is a gigantic task—in these feverish days of delirious production when the last purpose of the producers is to serve the schools—to supply information that will not disappoint concerning projection equipment, films, sources of supply, transportation, terms, cost, etc.; second, Visual Education aims to be nothing if not trustworthy. We want to be sure before we speak so that, when we speak, our readers can be sure.

This subject is mentioned further on page 46 of this number. We shall have much more to say in the May issue.

# Scope and Outlook of Visual Education

EDITOR'S NOTE.—This address was delivered at the Cleveland Convention of the National Education Association, February 25, 1926. It is here printed for the first time by special permission of Dr. Goode and the N. E. A.

IT is hardly necessary in the new department of VISUAL EDUCATION to remind ourselves of the fact that the psychologists have always been telling us that of all the senses, sight leads as an avenue of sense perception. Of that fact we are all of us sure. Nor is it news to most of us that sense perceptions are vastly reinforced and deepened when added avenues of sense are contributing to the presentation. We prove this to ourselves in a hundred ways every day. But it is one thing to state the fact and believe it and quite another thing to put it to use profitably in our formal education. Traditions in education, like other habits, persist, perpetuate themselves and may be hard to displace when better methods come along. We have grown so accustomed to the printed page as the foundation of school education—so satisfied with the old routine of assigning so much text and demanding a reaction from the pupil in some oral or written test, that it may be actually something of a shock to have a change suggested. Yet when we take an account of stock we discover that the printed page is one of the slowest means of presenting a wide range of information. To see a coral reef for even a few minutes will give a far more vivid and intimate realization of its character than any amount of printed description could do. With the impressions of the reef seen, felt, heard and smelt, a foundation is laid for a life long interest in all sorts of printed or spoken description and discussion of coral reefs.

But the world is large, and most people are rooted to the daily task. They cannot pick up and go to the ends of the earth to see the many things it is well to know about. So to the aid of the printed page has been brought more and more, in recent years, many devices in visual education to enlist the eye in arousing interest, deepening impressions, making it easier and quicker for the student to learn and to retain the lesson.

It is my purpose in this paper to make a survey of the various ways, beyond the printed page, in which the eye may be utilized profitably in the business of education. And then to make a plea for the correlation of the different agencies and the best application of them in educational practice.

One of the oldest studies in the school—Geography—was the first to take advantage of visual methods. The map is a system of shorthand in the presentation to the eye of space relations. From the earliest time it presented areas in two dimensions and came later, by one pictorial device or another, to suggest land relief, the third dimension. The map has always been a part of the fundamental equipment in geographic instruction. And yet it has never been made to give its best service to the pupil. In all geography rooms globes and maps are essential, but the very great value of the desk outline map to be filled in by the pupil, in exercises and tests on distribution, is an open and largely untilled field in education. For we are not only eye-minded, we are hand- or motor-minded; and working on a map has possibilities in education largely overlooked.

And because we are motor minded and because it is a good investment in education to enlist other senses than that of sight, the museum has been developed. Every museum is an investment in popular education, the value of which now is generally conceded. And the museum has here and there been put to work in the interest of school education. Perhaps the best development in America has been achieved by the Philadelphia Commercial Museum. As an aid in the teaching of geography, but especially of Commercial Geography, this museum has prepared many traveling collections with sets of articles, which are sent gratis to the schools, to be used for a specific time in classroom instruction. The exhibits are made up of samples of various commodities of commerce, such as textiles, raw and manufactured, cabinet woods, grains, ores, metals and other materials, which have in them a little bit of the reality of the world about which the pupil is reading and studying.

Very early also the geographer introduced the picture as an aid in the presentation of his subject. But it is only in recent decades that the value of the picture has been demonstrated in many other lines as well as geography. A reading book in the lower grades nowadays is unthinkable without generous illustration. All the sciences and arts use the picture and the diagram in increasing measure in texts and in articles for general reading. Botany, zoology, anthropology and geography would be crippled beyond measure without the prolific picture. The growing generosity of illustration by the current magazine and certain daily papers has been a godsend to the schools wherever live teachers have undertaken to collect and use these pictures as an aid in classroom instruction. One of the best services rendered by any periodical in this country has been that of the lavishly illustrated *National Geographic Magazine*. Its collection of pictures now runs to over fifty thousand and they are being reprinted and made available at cost for individual pupil's use.

The success of this picture phase of visual education has been marked. But it has required some genius to get best results. The pictures are as a rule too small for class use. They may be studied individually, but it is difficult to get a class discussion without having a picture large enough for use before the class entire. This early led to the use of the projection lantern.

But the lantern of early days was a cumbersome thing. It called for a darkened room, which has been always somewhat difficult to manage. Then the illuminant was a messy affair, with tanks of oxygen and hydrogen and candles of lime, always slacking into dust; the whole outfit dangerous in the hands of a novice and requiring a skillful operator. Thus the lantern could be used only by the school entire and largely for entertainment, not instruction. The coming of electricity gave much more freedom, but even here the danger of open circuits, and the attention to the open arc, have kept the equipment out of common use.

The coming of the Mazda filament lamp, however, has thrown all barriers down. Now little projection lanterns are available at small cost, and every school building may have one or more such lanterns. The lantern is coupled into any lamp socket, it can be safely managed by any child, the light is so intense that the darkening of the room is not a serious matter. The lantern now may be



ready for service at a minute's notice in any room where the electric current is available. And by means of the reflectoscope, book and magazine illustrations become available, also.

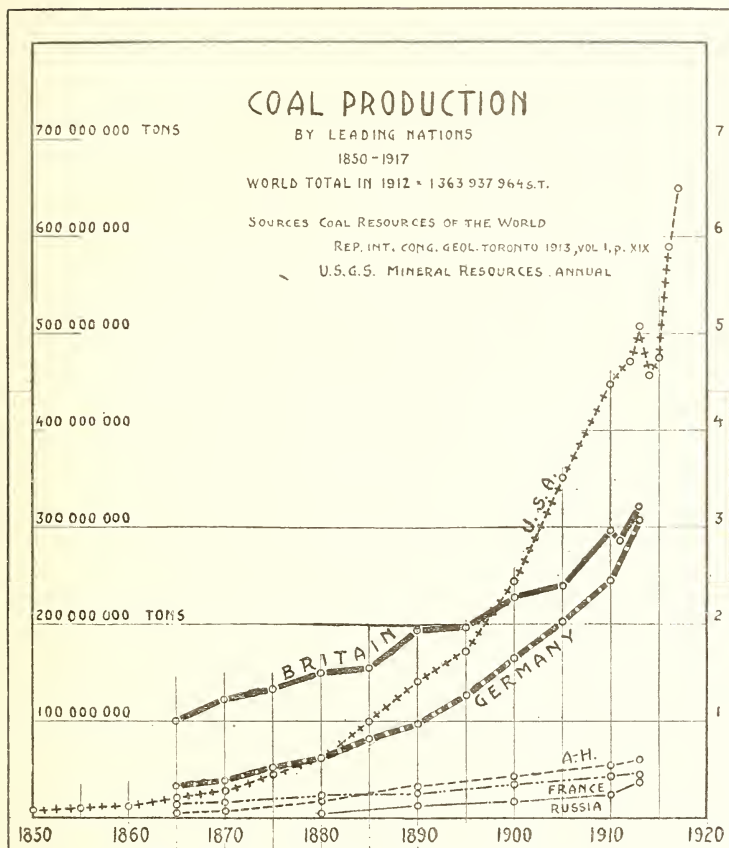
The lantern makes possible and profitable the use of many maps and graphs as well as pictures. Here is a very large avenue of service, which is little developed. A map can be copied into a lantern slide and colored for a dollar or so and thrown on the screen on a scale much larger than any printed map obtainable. This gives unlimited freedom to the instructor for many maps which we may never hope to have published in large form, could be used with profit in the class room. To make one such map would require much time and skill, and might cost fifteen or twenty dollars or more. Then, too, a hundred and fifty such maps in the form of lantern slides can be stored in one drawer of the ordinary card catalog cabinet of the library, whereas in the ordinary printed form, in rolls and on sticks, a whole room would be required for storage.

The graph is a device in visual education which has large possibilities and is but little developed. A whole page of statistics can be thrown into the form of a curve, as for example, the production of wheat year by year for a generation, and the trend of production can be read at a glance. Wheat export for the same years can be thrown into another curve and the two curves compared. The price of wheat can also be entered, and such combinations offer the finest opportunities for discussion and interpretation. I have seen great audiences of the best educated men and women sitting on the front edge of their chairs, in rapt attention, as some interpretation has been read from maps and graphic statistics. One may notice the conspicuous success of the Babson curves of business expansion and depression, and the growing use of graphics in many lines of business, to realize something of the possibilities of this form of visual education.

The photograph, the print, the lantern slide have done splendid service in the school room, but the finest service yet rendered has been done by the stereograph. The photograph presents but two dimensions. At best it suggests the third dimension. We are generous and supply out of our own experience the third dimension. But the stereocamera and the stereoscope work a miracle. They supply the actuality of binocular vision, and the third dimension is presented to the eye in vivid reality. This is a degree of perfection the camera alone can never give. The person who looks through the stereoscope looks upon the real mountain, looks into the depths of the real canyon, looks upon the actual statue, the actual cathedral.

The stereoscope a generation ago was an interesting and entertaining novelty, little more. Its place was on the parlor table, along with the reading lamp and the family Bible. But it has won its spurs now as one of the best devices in visual education yet developed. For the stereoscope, with its charm of intense reality, comes to have a teaching power of the highest value. But like many another teaching device, it was tried in the schools and failed to hold its own until long study and analysis of its possibilities in actual use had determined the correct mode of employing the stereoscope.

By going into the school room and earnestly watching the boys and girls



The graph puts a whole page of statistics into the form of curves which will show at a glance the trend of development through a period of time, as here; the pronounced expansion in coal production by Britain and the more rapid development by Germany; the phenomenal development by America and the final rank of the leading six coal-producing nations of the world.

react under the stimulus of this marvelous instrument, it was learned how it could be made best to serve the purpose of school room work. It was discovered that the stereograph must be worked, but not overworked. It must help get the day's lesson, not get in the way of the lesson. It must occupy the student without the attention of the teacher. It must lead the pupil to apply himself and learn for the pleasure of learning.

The method is simple. An ample supply of stereographs is provided. The



number in one standard set runs to 600. The subjects are chosen to cover the whole earth, and with selections so made as to cover many topics which will be studied in geography, in history, in literature. These stereographs are classified into all the topics where their use may be profitable, cross-referenced and indexed, and the whole study published in book form, as a Teacher's Guide, so that the teacher may find any stereograph available for teaching any subject as easily as she can find a word in the dictionary, and can put her hand right on the required stereograph without a moment's delay.

Each stereograph has on the reverse side a description running to 250 words, written in an interesting style and carrying the necessary information to the student. In use the teacher puts out the stereoscope and one or two stereographs, relating to the next day's lesson. Some time during the study periods of the day each pupil will study the stereograph, read the description and be ready next day to tell what he saw. It becomes a game to see who can stand and report in good English what he saw looking through the window of the stereoscope into the reality beyond. At the end of the week, or when the review on the country or topic comes, the same views, in lantern slide form, are put before the whole class, and some pupil is chosen to stand before the class and discuss what one view presents and other pupils report on other slides.

A real interest is aroused. Better teaching results. Live material is in hand always for drill in geography, history, English. The success of the method is unquestioned. The sets of views are in use in thousands of schools all over the country. It is the best contribution yet made in visual education in America.

The stereograph arrives at perfection in presenting the perception of solidity and distance, the third dimension of the view. There is nothing to compare with it in this service, but it is a static world. The waterfall is a frozen waterfall. The wave is an arrested wave. Motion is absent. Yet motion is another "dimension" and the presentation of motion in the picture is an arrival at another apex of perfection. The jetting, plunging water of the cataract is there, before the eyes. The gracefully moving animal, the rushing waves, the swaying trees, are all there, to the last perfect detail of motion. The marvel of it, the miracle of it, has an endless charm. And as usual, this interest has been catered to by using the film as an amusement, because, of course, people are always ready to pay well for being amused. So compelling, so persistent, so universal is this interest in the film that, as we are now told, the cinema business is one of the largest three or four industries in the whole country.

Now since education comes through arousing the interest of the child and since the power of the movie to arouse interest is patent to all, it has occurred to many people to draft the movie into the service of the school room. And the trial has been made repeatedly. Every trial has shown some measure of success, but always some critical drawback has arisen to block progress. The flickering light on the screen is hard on the eyes. The projection machine is very expensive. It uses a large current, which may be dangerous, especially as it is likely to set fire to the film. That puts it under ban by the insurance interests, and an expensive housing or shelter is required. This restricts its use to the auditorium, and

this in turn, takes it out of the reach of class work. The films are very expensive, and for the most part have been made with the one aim of entertainment, or of advertisement, so may not be satisfactory or even usable for purposes of instruction. In short, the whole matter up to the present moment seems like an exhibition of misfit effort, showing in a high degree a lack of intelligent cooperation on the part of the interests directly involved.

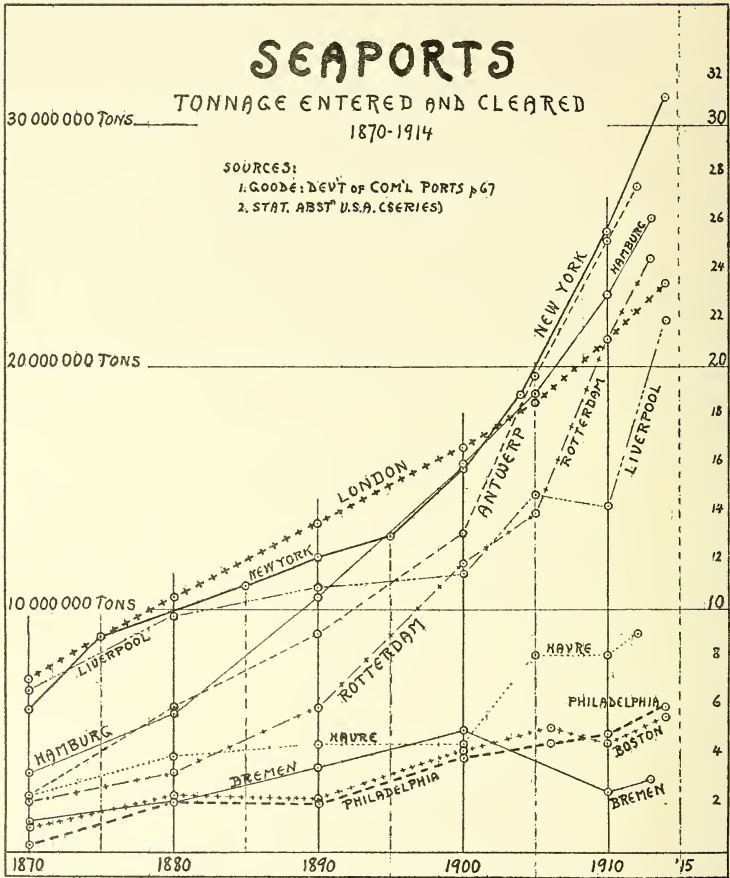
And yet the perfection of motion is there; the interest compelling power of the thing is undeniably there; the possibility of large service in school education thrusts itself before the mind's eye and will not down.

It remains to bring the mechanical elements of projection to such a point of perfection that the machinery can be forgotten. This is practically an accomplished fact. An analysis of the shortcomings of present day motion picture projection has been made, solutions of the difficulties have been found, and the result is a new projector, shortly to appear on the market, in which the weaknesses of present machines are eliminated. With such projection the eye no longer suffers from flicker, distortion, spasmodic movement, etc. One is no longer conscious of the mechanical agency behind the picture.

This is but a part of the activity of the Society for Visual Education, which has been recently formed. Educational experts in many lines have associated for the purpose of solving the problems in the adaptation of the cinema to purposes of instruction in the schools. All sorts of tests and measurements will be made to find out the place and best service of each of the devices in visual education in the administration of the school program. Carefully thought out films are being provided for the express purpose of class instruction. The scenarios for these films will be made to meet the approval of the best teachers in the subject presented.

Now let us make no mistake as to the efficiency of any or all the devices which may be used in visual education. No one of them or all of them will ever take the place of the live, earnest, competent teacher. Moreover, the best of teachers will have to be initiated into the best methods of using the graphic material, whatever it is. All of the visual devices together will not remove the need of effort, of work on the part of the pupil. The pupil's real achievement will be measured next generation as it was last by the attention and effort of the pupil. But the visual helps will create interest, stimulate attention and reduce effort. So more ground may be covered in a given time. So also may a higher record of achievement be won by a larger number of pupils.

And this brings us to the economic phase of our quest. It will pay school boards to invest in the proven methods of visual instruction. This has been demonstrated in repeated instances, but one case will serve, by way of illustration. The Racine, Wisconsin, schools in 1910 had a good record in efficiency. They compared well with the schools of other cities of similar size the country over. Their record of pupils failed at the end of the year was low—only one in ten of the pupils below the high school. A ten per cent failure was to be expected. In 1910 these schools began to adopt the stereographic equipment called the 600 set, and with the aroused interest, and better organization of recitation, the failures



Very complicated interrelations are shown to the eye at a glance as here; the rapid rise of London as the world's leading port between 1870 and 1903; the later more rapid rise of Rotterdam, Hamburg, Antwerp and New York; and the final rank of the world's leading ten seaports.

began to decrease. Rooms began to make a record of no failures at all during the year. In 1914 the Russell Sage Foundation made a wide study of "failures and promotions" and the Racine schools were recorded as showing an average of 5% of failure. The survey also brought out the fact that in the schools where the new system of visual education was not used the record still stood at 10%. In the 5,000 children in the Racine schools, between the kindergarten and the high school, cutting the failures from 10% to 5% gave promotions to 250 pupils, who

without the improved instruction would have been ranked as failures and would have been required to repeat the course. To have had 250 pupils repeating the course would have called for six or eight extra teachers and extra rooms. On the basis of the average cost of a year's schooling, this promotion of 250 pupils was a saving to the taxpayers of Racine of between \$10,000 and \$15,000, in the year. Think of what the saving to the whole country will be, when visual education in all its phases has been fully worked out and entered to the game in all the schools!

There are in the common schools of the country at this time, in the grades below the high schools, over 20,000,000 pupils enrolled. The record shows over 15,000,000 in attendance. The average annual cost per pupil in these schools in 1914 was not far from \$30 each. This cost has doubtless doubled since then. An average of ten per cent failure in this number gives us about 1,500,000 pupils to repeat the work. This, at \$60 per pupil, makes the very respectable sum of \$90,000,000 per year. Suppose now, the introduction of visual education could cut this failure record down five per cent on the average. That would make a neat sum of \$45,000,000 per year, a prize well worth working for. Now not only can this improvement be made in the grades, it can be made in some measure in the secondary schools as well. The equipment thus made ready may serve in Americanization work in churches and in Community Centers. This is a wide and magnificent opportunity for service. It is worthy the best brains and most serious effort of all of us.

J. PAUL GOODE,  
*Professor of Geography,*  
*University of Chicago.*

# New Films for Teaching Americanism

ONE of the problems that is receiving a great deal of attention in the United States today is that of making better citizens not only of immigrants who have come to our shores, but also of native Americans. The term Americanization has become so common that many people are beginning to tire of it, but the problem is so serious and the need of its solution so great that no thinking citizen can fail to be concerned about it.

It required a world war to awake America to the need of solidarity among its citizens. For many years we had been perfectly content to idle along assimilating, more or less imperfectly, from 55 to 110 new arrivals for each thousand of native population during each decade. These newcomers for the most part settled in our large cities in compact masses, and it was only vigorous work on the part of the public schools and civic agencies that secured unity when the crisis came. The problem of making good citizens out of so great a mass of people has never before been met in any country in the world.

No country was subjected to such a large influx of foreigners as was America during the last half of the nineteenth century. In no country was there such great need of nationalization. It made no difference to the Empire of Russia whether its citizens were loyal and true. The police cared for that. It made but little difference to Louis XIV whether the French were good citizens. His army took care of that. But America is not ruled by czar or emperor. It is ruled by people who are chosen from the masses, and chosen wisely or not according as the people are wise or not. So the problem of nationalization in America was more important than in any other country in the world—first, because of the large proportion of foreign born immigrants, and second, because of the peculiar need of true assimilation in a democracy.

The careless way in which America treated the immigrant and the almost entire freedom that was given him caused grave concern upon the part of many of our farseeing leaders. They knew that not all of these who became citizens were Americans in heart and soul. They knew that not all of them were coming to love this country. They knew that not all were learning to understand our government and the ways in which it worked. They felt that the complete assimilation which had taken place in the earlier half of the nineteenth century was not being achieved in these later years. They therefore expected grave difficulties in the face of a national crisis, and so widespread was this belief that the German Foreign Office felt that it could count with certainty upon the loyalty to the fatherland of the great German population in our midst.

But these alarmists were mistaken. The American public school had done its work, and the unity with which our country went into the great war and the almost universal support that was given it is, as a matter of fact, one of the wonders of the world. It was almost completely unexpected.

Just because, however, we were able to weather the storm in the past does not guarantee that we can face the crisis that is now confronting us. It is one thing to fight an enemy like the Kaiser with his great armies against which we

could marshal our public sentiment. The murder of Edith Cavell, the Zimmermann note, and the Belgian atrocities gave us points about which to center our emotions. The selective service act, which took boys from every home, and the ever present soldier and the passing flag continually kept us in a fever heat of patriotism. It is quite another matter now. Our new enemy gives us none of these opportunities. Lenin and Trotsky are striving to undermine our society, they are speaking frankly of a new internationalism, the downfall of every government, a war to the death between capital and labor, and a dictatorship of the proletariat. They are not fighting us with 42 centimeter guns. They are not bombing our cities. They are working quietly and faithfully upon the minds of men, gathering little groups together here and there, magnifying injustices, and speaking of our government as an agency which takes boys for its army and money for its coffers and gives nothing in return. To a man who does not clearly understand what our government is doing for us, who does not keenly appreciate the duties that he owes in return, who does not know that the power to correct injustices now lies in his hands, the doctrine of the Bolshevik propagandist is apt to sound good. He is apt to think that there is some sense in it. He is not likely to see the situation in the large. It will be difficult to suppress Bolshevism with policemen and with soldiers. It will be impossible to deport all its sympathizers. The enemy is unseen. We can not count on arousing the emotions of our people in support of the struggle. The only way to fight an idea is with another idea. America's only insurance is education.

We can count on the safety of the coming generation if our school masters do their work. If the people of America can raise teachers' salaries and stand behind the schools in the way they should, we need not worry about our country twenty years from now. The problem that we are facing is to make very sure that our country does not go to pieces within the next ten years, and the solution lies in the universal and widespread education of the adult.

There are many agencies at work upon this problem. The Y. M. C. A. is developing an ambitious and farsighted program of work in health, citizenship, religion, and loyalty in all our large centers. The Inter-racial Council is working through the foreign language press. The United Americans are working in a variety of ways, most notably perhaps the poster advertising. The American Legion is standing firm. Many of the State Councils of Defense have been perpetuated. The Women's Clubs have been doing their part, publishing primers, holding classes, encouraging boards of education and activities of a similar sort.

There is one avenue of approach, however, that has been relatively neglected—namely, the moving picture. It is true that a great many films have been produced that are called Americanization pictures. A complete list of them has recently been published by the National Board of Review of Motion Pictures. Careful examination reveals nothing but stories of the life of Americans and little plays aiming at patriotic spirit, or else geographic scenes of our own land. It is possible that *The Romance of Happy Valley* or *The Copperhead* will yield beneficial results. It is not out of the realm of probability that *In Glacier Park* or *The Grand Canyon of the Colorado* will make our people appreciate something



of the grandeur of our land. But in almost no degree are they furnishing ammunition to combat the enemy in our midst. The citizens and prospective citizens of our country need to be so clear as to the privileges and responsibilities of their citizenship and so active in their support of our own government that the Bolshevik propagandist and the I. W. W. leader can make no impression upon them.

We need to have available for the unrestricted use of every city and state, every Council of Defense and Americanization committee, every patriotic meeting and class in citizenship, a series of films especially designed to supply this need. They should not waste time in romance or fanciful story. The facts in themselves are interesting enough. In a scientific pedagogical way they should tell the audience (1) that the government of America now serves all its people in very many ways, (2) that this service is alike to rich and poor, (3) that there are many duties that each citizen owes in return, and (4) that if there are any defects in our present system, the voice of each citizen may help correct them. These films should deal only with the facts as we find them. There should be no effort to confuse the present with the ideal. Without fear, our country can stand comparison with any other in the world.

WILLIAM F. RUSSELL,  
*Dean of the College of Education,  
University of Iowa.*

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VISUAL EDUCATION is glad to contribute its bit of publicity to the following report, which has just been released by the National Education Association. It is a most significant paragraph on a subject of grave importance to America's future.

## Teachers Suffer Most

"Among those employees who suffer most acutely have been the teachers in our schools. Their situation in many parts of the country has become deplorable. Thousands of them, trained in their profession, with a high and honorable pride in it, have been literally forced to leave it, and to resign what had been their hope, not of wealth, but of loyal service in building the foundation of knowledge and character upon which our national strength must rest. In consequence there is everywhere a shortage of teachers. An inquiry made by the Bureau of Education showed that in January, 1920, more than 18,000 teachers' positions in the public schools of the country were then vacant because the teachers to fill them could not be had. Over 42,000 positions are filled, in order that they may be filled at all, by teachers whose qualifications are below the minimum standard of requirement in the several states. It is the estimate of the Commissioner of Education that more than 300,000 of the 650,000 school teachers of the country are today "below any reasonable minimum standard of qualifications." Many of those who remain in our schools receive less pay than common laborers, despite the long years of preparation for their profession that they have undertaken. This situation is a national menace. It is useless to talk of Americanization and of the diminution of illiteracy and other national educational problems, unless it is faced at once.—Report of the Industrial Conference, called by the President."

# Human Eyes and Optical Instruments II

## —Telescopes

NO OTHER sense has benefited so much from artificial aid as that of sight and no other optical instrument has so marvelously extended the powers of the eyes as the telescope. It is the telescope that has brought within our range the wonders of the universe.

Before the invention of telescopes men looked up into the clear night sky and saw the planets as tiny points of light; the great instruments of today magnify them until they appear larger than the sun or moon appear to the unaided eye, and show that they are worlds which in most cases are greater than the earth. Without optical aid not more than 5,000 stars can be seen, and in an-



The planet Saturn as seen through a large telescope, from a drawing by Professor Barnard. Saturn is now visible in the evening as a yellowish star a little east of south (the very bright planet directly south is Jupiter) and about two-thirds the distance from the horizon up toward the zenith.

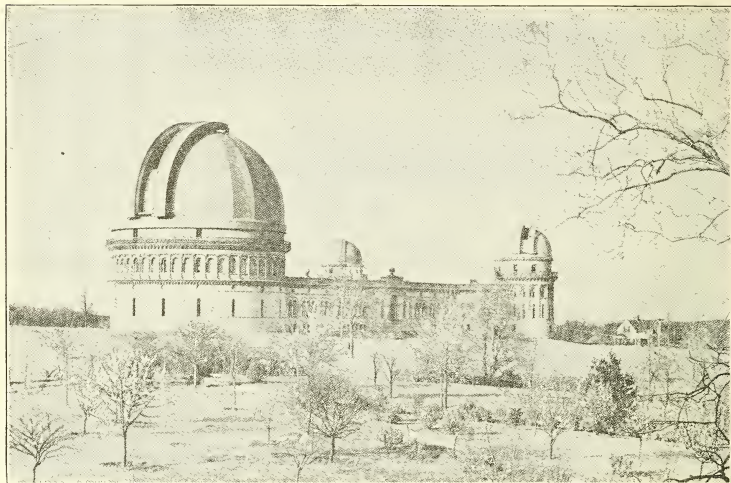
tiquity they were often thought to be little jewels on a crystalline sphere; modern instruments make visible hundreds of millions of stars, and show that they are enormous blazing suns, each a million times as large as the earth. The ancients turned their eyes toward the starry heavens and were inspired by what they saw to some of the noblest passages in their literatures and to some of the finest conceptions of their philosophies;

modern observations have been of both practical and theoretical value—they have led to the discovery of the laws of motion and the foundations of mechanics, they make safe the navigation of the seas, they furnish time to mankind, they show us the place we occupy in the universe, they are the basis for theories respecting the origin, development and extinction of the earth, and they bring us face to face with infinity in both space and time. In the making of telescopes there has been much that was romantic, as we shall see, and in the use of them there has been much arduous and self-sacrificing labor.

The telescope is a relatively modern invention. While some passages in the writings of that universal genius, Roger Bacon, seem to indicate that as early as the year 1280 he had sound ideas respecting the theoretical basis for making telescopes, their practical construction did not begin until the first decade of the seventeenth century. At about the time the early immigrants to this continent were landing at Jamestown, Hans Lippershey, a Dutch optician, made a small telescope for viewing terrestrial objects. Within a year or two the brilliant

Italian, Galileo, had independently invented the telescope. Then, for the first time in the history of the human race, men saw the sun, moon, and planets with optical aid. Although the telescope of Galileo was small and, when judged by modern stands, very poor, yet every observation through it was an adventure comparable to a voyage across an unknown sea, and the discoveries made with it were as marvelous as the new lands which Columbus and his followers found by sailing westward from Europe.

In 1610 Galileo finished his third telescope, which magnified thirty-three



The Yerkes Observatory (from the southwest) of the University of Chicago, located near Williams Bay, Wisconsin, on the shores of Lake Geneva. The large dome contains the great 40-inch Yerkes refractor. The smaller dome at the right contains a two-foot reflector, and the other small dome a 12-inch refractor.

diameters. With it he discovered four of the satellites of Jupiter, the rings of Saturn, mountains and plains on the moon, spots on the sun, and the rotation of the sun. For half a century telescopes were used exclusively for observing the surface characteristics of celestial bodies. Then it was realized that they could be made instruments for precise measurements, and this use has become more important than the former.

Optically a telescope consists of two parts: (a) an objective lens, or a concave mirror, which brings the light to a focus and forms an image of the object; and (b) an eye-piece, which magnifies the image and enables the observer to see it. In case an objective is employed to focus the rays, the light passes through a lens and the telescope is called a refractor. When a concave mirror is used to bring the rays to a focus the telescope is called a reflector. Refractors are generally used for visual work and reflectors for photographic.

The essential parts of a simple refracting telescope are shown in Figure 1, in which L is the objective and E is the eye-piece. If the telescope is pointed at a very distant object, such as a star, the rays enter L in essentially parallel lines. They are brought to a focus at F and after passing through E emerge in parallel lines. Consequently when they enter an eye beyond E they will be brought to a focus on the retina and the star will appear to be a point of light as it does to the unaided eye. But the large cylinder of rays which enters L is condensed to the small cylinder which emerges from E. Therefore many more rays will enter the eye than would enter it without the telescope, and the result is that the apparent brightness of the star is greatly increased. How greatly it may be increased is easily determined. The diameter of the pupil of the eye when a star

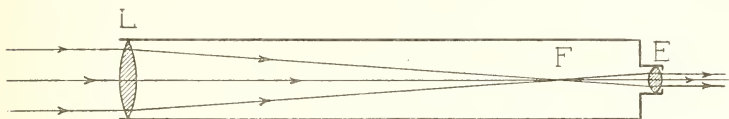


Figure 1

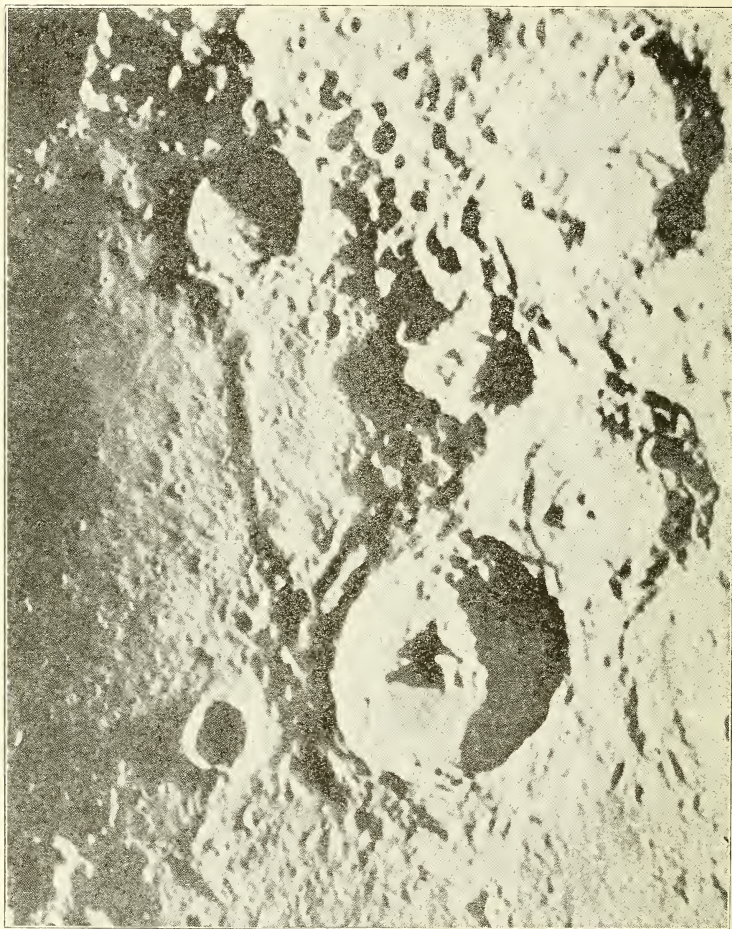
is observed without optical aid is about one-fifth of an inch; the diameter of the objective of the great Yerkes telescope, the largest refractor in the world, is forty inches, or two hundred times that of the pupil. Their areas are as the squares of their diameters. Therefore the great lens gathers  $2^2=40,000$  times as much light as enters the unaided eye. This is the reason that we now see hundreds of millions of stars in addition to the five thousand that were visible to the ancients.

A telescope not only makes such an object as a star appear brighter but it magnifies objects having appreciable apparent diameters, such as the sun, moon, and planets. The amount of magnification is proportional to the distance from L to F and inversely as the distance from F to E. With every telescope a number of eye-pieces are supplied, giving various distances from F to E. Consequently every telescope gives several magnifications, depending on the eye-piece used. Theoretically an eye-piece can be constructed to give almost any magnification, but there are severe practical limitations. If the image at F is very good an eye-piece can be advantageously used giving a higher magnifying power than if the image is poor.

In the case of the great Yerkes telescope the image of the object is on a large scale because the distance LF is sixty-two feet, and, under good atmospheric conditions, the image is unsurpassed in excellence. The highest power that can be advantageously used with it on most objects is 1,000 diameters. With such an eye-piece the apparent distance between two very close stars is increased one thousand fold, and the apparent diameter of such an object as the moon is multiplied by one thousand. So many large numbers are used in astronomy that it is easy to fail to appreciate how great this magnification really is. In order to illustrate it consider the moon whose apparent diameter is about half a degree. If it were magnified one thousand times it would have a diameter of 500 degrees, or 140 degrees more than a full circumference. Obviously with such a magnifica-



tion only a very small part of it could be seen at once. In fact, the more a telescope magnifies the smaller its field of view, and for this reason one is often disappointed when he sees through a large telescope for the first time.



A small portion of the moon near the center of its disk as photographed with the great Yerkes telescope. At reading distance the apparent area of the part shown is more than 100,000 times greater than it is as seen with the unaided eye. The large crater is Theophilus, 64 miles in diameter and 17,000 feet deep. The sun is shining from the right toward the left, and the shadows of crater rims and mountains, such as those in Theophilus, extend toward the left. There is no water or air on the moon, and consequently the shadows are very black.

Telescopes are not so simple as might be inferred from Figure 1. If a telescope were made exactly on that plan the rays which pass through the margin of L would be brought to a focus before they reached F. The result would be an imperfect image. Moreover, the blue rays would be brought to a focus before the red rays, and this would be a serious additional defect of the image. These imperfections are both smaller the less convex the lens and the greater the distance from L to F. Consequently the early telescopes were often of very great focal length and correspondingly unwieldy.

When the images are produced by light reflected from mirrors the second defect is not present and the first can be largely remedied. It was for these reasons that Gregory and Newton abandoned refractors and made only reflectors. From their day till this reflectors have been much in use, especially for photographic purposes.

It was later discovered that the defects of refractors could be largely eliminated by making the objective of two pieces of suitable glass. The most common form is to have a double concave lens of heavy flint glass on the outside and a double convex lens of lighter crown glass on the inside. When all the surfaces are made exactly right, depending on the desired distance to F and the optical properties of the two kinds of glass, the defects which have been described are almost completely eliminated.

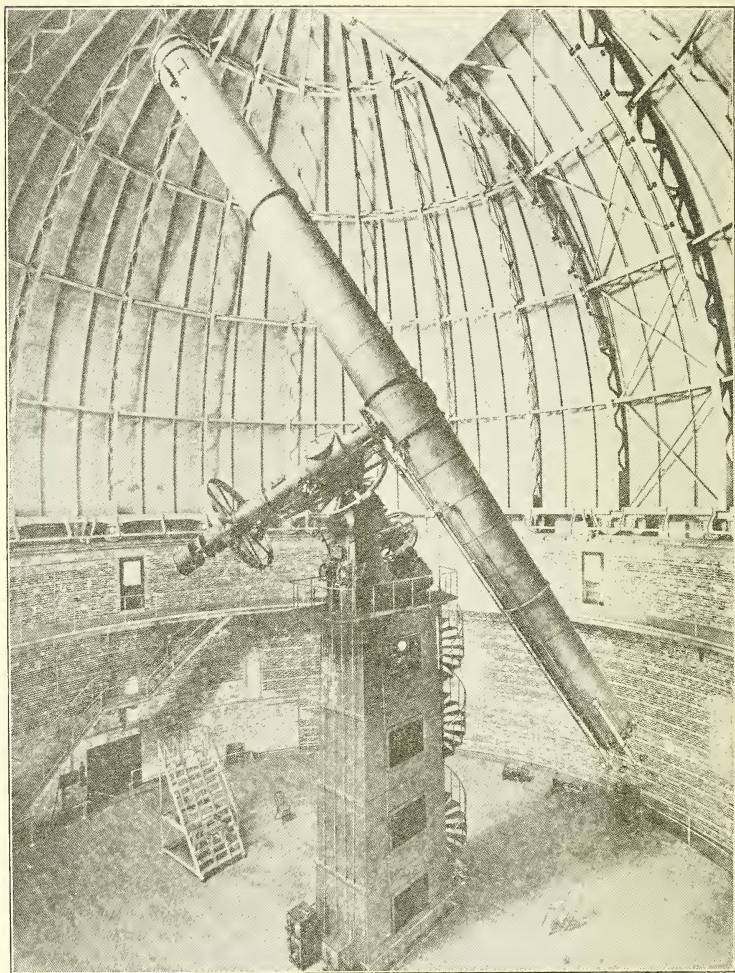
The surfaces of telescopic lenses and mirrors must be produced with the most extraordinary precision. The requirements are far beyond those of the finest machinery or even of the surfaces of spectacle glasses or camera lenses. In fact, they must be accurate to the order of a fifty thousandth of an inch, and are the very limits of the mechanician's art.

All great telescope makers have been real artists. Among the foremost of them was William Herschel. He left Germany as a young man to avoid military service and settled in Bath, England, where he became a teacher of music. A copy of a book on Astronomy fell into his hands and fired his imagination. He wished to scan the heavens for himself, but there was neither a telescope to which he could get access nor one which he could buy. Consequently the musician took up the study of the mathematics which was necessary to design a telescope. After he had mastered it he began the grinding of mirrors with his own unskilled hands. The first results were only fair but they were encouraging. When the nights were clear he searched the sky with such telescopes as he had produced; when they were cloudy he worked on new mirrors. Better and still better ones were made, even up to four feet in diameter, and discoveries followed one another in rapid succession. In fact, in 1781 Herschel found with one of his own instruments the planet Uranus, the first world to be discovered in historical times. This discovery made him the most celebrated astronomer of his time. His sister Caroline assisted him in a long life devoted to astronomy, and he was succeeded by his son John.

Of all makers of telescopes, Alvan Clark and his son Alvan G. Clark have been the most successful and the most celebrated. The elder Clark was a portrait painter of Boston, when in 1844 he became interested in the construction of a



little reflector. His artistic temperament seems to have been adapted to the peculiar requirements of the exacting work of making mirrors and lenses. Phenomenal success soon attended his efforts. Five of his refractors were purchased



The great Yerkes telescope, the largest refractor in the world. Its length is 62 feet, its diameter is 40 inches and its weight is 9 tons. The chairs on the floor and the winding stairway on the pier give an idea of its size. It is accurately moved by clockwork so that it follows the stars in their motion across the sky.

by the English astronomer Dawes. The Clarks made seventy five telescopes having an aperture of more than six inches, and they were of a perfection which had never been approached and which has not yet been surpassed. Five times between 1860 and 1895 they made telescopes which were larger than any then in existence. Among their greatest instruments are the 23-inch telescope at Princeton, the 24-inch at Flagstaff, Arizona, the 26-inch at Washington and a similar one at the University of Virginia, the 30-inch at Pulkowa, Russia, the 36-inch at Mount Hamilton, California, and the 40-inch Yerkes telescope at Williams Bay, Wisconsin. The Yerkes telescope was the last work of Alvan G. Clark, and for twenty-five years it has stood as the largest refractor in the world.

Americans are often supposed by Europeans to be dollar-chasers, and to care little for the finer things of life. Although there may be some truth in the accusation, it is nevertheless true that no other people have been so generous in the construction of telescopes, or have been so successful in using them. The two largest refractors in the world are in the United States, and of the ten largest ones in the world six are in this country. The conditions are similar in the case of reflectors. The three most powerful reflectors in the world are in North America, two at the Solar Observatory at Mt. Wilson, California, and one at Victoria, British Columbia. The reflectors are considerably larger than the refractors. The Canadian telescope has a diameter of 72.6 inches, while those on Mt. Wilson have apertures of 60 and 100 inches.

The question always arises whether or not still more powerful telescopes will be made. It is unsafe to assert that anything will not be accomplished, but the difficulties attending any appreciable increase in the dimensions of telescopes would be enormous. They would be due not alone to the greater weight and unwieldiness of the instruments themselves, but in part to the ever-present unsteadiness of the air. However clear the night may be the stars twinkle, and their scintillations are due to the irregular paths of the rays of light through an atmosphere which is always in motion. When these irregularities are magnified a thousand times, as they are by a great telescope, they become so serious as to render further magnification useless. At present, the unsteadiness of the atmosphere is the most serious obstacle with which astronomers have to contend, and is the reason why observatories are often placed on mountains above the denser parts of the air. Fortunately astronomers have invented other instruments which are almost as valuable as telescopes.

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# What is an Educational Motion Picture?

THE great popularity of lantern slides in education and their effectiveness in teaching bring forcibly to our attention the possibility of using motion pictures for similar purposes. The motion picture is so much more effective than the lantern slide in every sense that it is rather odd that it has not been pressed into educational service before, in spite of its greater expense and mechanical difficulties in pedagogical adaptation. The expense of the films has undoubtedly been a deterring factor. The films used for other commercial purposes are routed from one city to another, but such an arrangement would hardly be applicable in education because the several schools which are giving the same curriculum would all need the films the same week. This is a serious difficulty in that it forces the schools to buy the films instead of renting them. It is not until quite recently that projecting apparatus has been adapted for school purposes. The commercial theater projecting outfit with its booth and underwriters' regulations are only with considerable difficulty applicable in schools. With the appearance of projectors specially adapted for schools, the extension of motion pictures in education will depend largely on the development of pedagogical procedure.

Here we should recognize the necessity of a type of organization which was not necessary in the adaptation of lantern slides to teaching. In preparing lantern slides the individual instructor can prepare his own charts, collect his own pictures, and he can without further technical assistance send his material to the nearest photographer who makes the lantern slides for him. Sometimes the instructor even prepares his own slides. This is not at all possible with motion pictures. The individual teacher might prepare a scenario for that which he desires to teach by motion pictures, but he will rarely possess the technical insight necessary for predicting just what the effect of his scenario is going to be. He may have the correct content for his pictures and it may be arranged in a pedagogically acceptable order, but the scenic detail in motion picture presentation necessitates technical assistance of a type which the individual teacher rarely possesses himself. Furthermore, the great expense of the preparation of motion pictures compared with that of lantern slides necessitates more administrative procedure and greater caution. It is obvious that the development of motion pictures in education will depend on the combination of the talents of the expert in the subject matter to be taught, the expert photographer with experience in motion pictures, the scenario writer, the film laboratory and others. Possibly a professional pedagogue should be added to the staff to pass on the purely educational features of presentation with or without portfolio in subject matter, as the case may be. The first problem in the development of acceptable motion pictures for educational purposes is one of *organization*.

The commercial interests involved in the motion picture industry have by no means been blind to the educational possibilities of their art. But the unguided attempts of commercial organizations to prepare so-called educational films are ludicrous to professional educators, with due respect, of course, to the impulsive

and commercial brains that have made the attempts. Their efforts were a necessary part of the development of educational films.

I should like to call attention to what I consider the fundamental criterion of an educational film. A film to be educational must correlate with a curriculum; it must correlate with class room or lecture work. In order to do this it is absolutely imperative that the films be prepared so as to fit a syllabus or outline of instruction. Certain facts, principles, operations or ideals are to be taught. Enumerate them; arrange them in a teachable order, and then parcel out the teaching procedure among the various teaching media, such as the recitation, the lecture, the laboratory, the field trip, the home exercise, the problem, the film, the lantern slide, the demonstration, etc. When educational films have been fitted into the educational regime in such a manner they will be *serial* in character. Film so and so will precede or follow lecture so and so. The film equipment for any given course will in all likelihood consist of a series of films definitely placed in the course of instruction. One does not need to know much about the so-called educational films now on the market to realize how hopelessly out of place they are. No commercial film organization can produce educational films without the close cooperation of those whose profession it is to teach.

Motion pictures have had entertainment as their primary purpose and that will perhaps always be the most general purpose of motion pictures. Without depreciating in the least the legitimate place of motion pictures for purposes of entertainment, it is necessary for us to keep in mind that educational films have a utilitarian purpose.

If a film that purports to be educational is too entertaining we had better look it over again to see if it is really educational. If we can make educational films interesting, attention-holding, and entertaining, so much the better. But the point I wish to make is that a film may be of the very highest educational value as a teaching tool, even if it is extremely boring and uninteresting to the casual onlooker. The best textbooks about which the thinking student is enthusiastic and from which he receives professional inspiration are perhaps quite generally meaningless and uninteresting to the layman. Let us realize from the outset that an educational film is a teaching tool and that it should be accepted or discarded on its merits as a teaching tool. Its entertaining features are secondary but desirable, of course.

The first catalogues of so-called educational films were probably prepared by listing, in a heterogeneous collection, all kinds of films that happened to be available and which could be thought of as in some way instructive. Thus under the caption "Geography" would be listed any and all available films from foreign lands, and so on for other categories without any educational plan. These films have no doubt served a good purpose for isolated occasions in which some combination of entertainment and instruction was desired. No doubt such classifications will continue to serve a good purpose, but the real educational films will be the ones that are prepared to fit in as a part of the teaching routine in organized courses of instruction in the public schools and in the colleges.

There is a further distinction in terminology which I should like to suggest



in this connection, namely, the distinction between propaganda films and educational films. In a large social sense a propaganda film is also educational. During the last few years the term propaganda has become almost synonymous with German intrigue, but the term should not necessarily have a derogatory meaning. The distinction is largely in the attitude of the percipient. If the film is sugar-coated and presented ostensibly in the form of entertainment, but actually for the purpose of convincing the audience about something, of making them think in a certain manner about something, the film should more properly be called a propaganda film. If the audience takes the explicit attitude that they are there for instruction, and if they are looking for instruction while watching the film, then it is truly educational. My reason for drawing this distinction is that the types of organizations best qualified to prepare these two types of film are radically different. Educational films are easier to prepare than propaganda films, because experts in the subject matter to be taught are usually more readily available than those who are competent to plan an effective film propaganda.

One rather frequent type of propaganda film is the advertising film. I recently saw a film in which was described the story of a small town merchant who had difficulty in keeping his accounts. He was continually hampered by clerks who stole money from his cash drawer and by customers who were dissatisfied with the errors made in keeping their charge accounts and payments. The film shows a salesman going thru the motions of selling the merchant a cash register and the satisfaction which followed the investment in this device. The merchant's contentment is extreme with freedom from worry about the accuracy and honesty of the various cash transaction in his store. His home life becomes peaceful and he soon rides around in an automobile, which he could not previously afford. The moral of the story is that it is good to have a cash register. Now this kind of film is perfectly legitimate, but I should call such a film an advertising film or propaganda film, rather than an educational film in the more conservative sense. Such films as I have just described often serve the important purpose of rendering more stable the corporate spirit and morale of an organization, and their social usefulness in this sense is very large.

Another variant of the propaganda film is the portrayal of the failure of a salesman in a department store who fails to sell a customer because of indifference to the customer. Another salesman appears on the scene and by his courtesy and his knowledge of the tricks of selling he succeeds in selling his victim a large order. The film is of course not complete without showing the customer as extremely pleased with the purchase, and the salesman must of course be shown as receiving a large bonus at the end of the month. In a film of this sort the training which the audience receives is slipped over unlabeled. The percipient, with sufficient exposure to this sort of thing, will himself become more courteous and skillful in selling his wares. Much of the training so received may even be attained by unconscious imitation of the film action which has been portrayed as agreeable and successful. The behavior of the poor salesman, who might even be the villain in the film story, would be less frequently imitated. Now I shall

not argue as to whether this sort of film could be called educational, but personally I should prefer to call it by some other name.

On the other hand, if we arrange films for teaching salesmanship in which the audience takes the explicit attitude that they are going to learn about the right and wrong way to behave toward a customer, the right and wrong things to say, the right things to sell to certain types of customers, and if the films make no pretense to hide the fact that they are prepared to teach us something according to a systematic educational plan, then let us call them educational.

Another kind of film, which is frequently called educational, but which does not satisfy our criterion for educational films, is what I should call the "story-of" picture. Consider, for instance, the "story of paper," in which the film starts with pictures of a forest, some exciting glimpses of logging, a flash or two from a paper mill and so on until one sees the paper rolling thru a printing press. All this is somehow supposed to be quite instructive, and it is if we start without knowing anything at all about the manufacture of paper, but the main purpose of "story-of" films is evidently entertainment. This is more apparent if you discuss matters of inclusion and exclusion with scenario writers and photographers. Their universal criterion which overshadows every other thought is always "Is this stuff interesting?" If it is they accept it. And so it is that we have listed among educational films the story of bricks, the story of the ocean, and the story of everything else that is at all interesting. I spent one summer in a well-known laboratory preparing this kind of educational films. My assignments were in succession the preparation of a film to show how a cream separator works, using glass models and colored liquids to indicate the separation of the cream, then we prepared a film to show how Foucault's pendulum works, and finally we prepared a film to show the habits of bugs! No one can maintain a professional attitude in education in such a headless conglomeration, but this has been typical of educational film work until very recently.

Another type of picture which should also be taboo as far as our criteria of educational films are concerned is what I should call the "Oh, how wonderful" picture. By all means, let us show wonderful things in pictures, but let us not consider our job of education completed when we have convinced the audience that what they have just seen is truly wonderful. Too frequently the purpose of a film of this type seems to be to have the percipient gasp with awe at huge and colossal things, beautiful things, intricate things, and to marvel at these wonderful modern times. If this sort of thing serves the purpose of arousing interest in that which you want to teach him, well and good. But it is taboo as far as education is concerned, if it does not give more than gluttonous satisfaction in the sensational.

Motion pictures could be used to teach in a systematic manner such subjects as ethics, patriotism and corporate spirit. If this instruction by films is carried out in an explicit manner so that the percipient is aware of the fact that he is learning a principle of conduct, the instruction might not be as effective as if the films were arranged in the nature of a propaganda. Principles of conduct, whether they refer to courtesy, the ethics of business, or patriotism, can perhaps



best be imbibed under some other label than that of instruction. While this is a large field of service I am confident that professional teachers should devote their energies to the development of educational films in the conservative sense and leave to another class of specialists the preparation of propaganda films.

If the preparation of educational films is done extensively it will undoubtedly be advisable to develop a technique of presenting the subject matter which would differ in some respects from that of the more usual type of film. It will be necessary to devote considerable thought to the manner in which titles and descriptions are combined with the pictures. Educational films must be more deliberate than the ordinary film. Above all it will be necessary to enable the percipient to take the attitude of actually studying, scrutinizing, examining the content of the film, rather than merely looking at it. It will probably be advisable to devote more film length to any given topic than would be necessary for entertainment purposes.

The expense of educational motion pictures will probably be reduced in time when it will perhaps be possible to use the opaque projector principle with the pictures printed on strips of sensitized paper, instead of on the expensive celluloid film. This should not be impossible, especially in view of the fact that the size of picture needed for class room use should not necessarily exceed four or five feet square. The projector for such an arrangement would be simpler than those which are required for handling with safety the inflammable film.

My main point in regard to educational motion pictures is that they must be serial and arranged to fit a specified curriculum. A set of thirty or forty reels of film would be part of a carefully prepared course of instruction in which the films dovetail with the other teaching media. This can not be accomplished except by the cooperation of experts in the subject matter to be taught, and the technical assistance of those who are versed in the motion picture art.

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# The Motion Picture and English Literature

THE moving picture has been hanging for some time about the educational threshold, and many teachers have been eagerly looking for some one to show us how to use the motion picture in school work for some other end than mere entertainment. Five years ago I approached a publisher with a scheme for supplementing the textbook with the screen, the printed word with the pictured action, Hotspur's "Oh, gentlemen, the time of life is short!" with a flash of the actual deeds of the combat, or Falstaff's ragged army on the march. But nothing came of it. The imprisonment in the Tower of educational convention is too much for most of us; we actually do not dare experiment; we will not take our freedom when we may.

The motion picture is now seriously to be used in school and college work. Plans are on foot to investigate the field of the educational use of moving pictures, to find, to stabilize, and to supply the demand. I feel that it is not unsafe to predict an educational stir. The chance for vitalization of class-room processes is evident; one sniffs a breath of educational fresh air.

There is, indeed, a chance that we shall take too much of it at first. It will be so easy to be absurd, to make a toy of the motion picture in the class room, to use it to replace effort on our own part, and on the pupil's. That way failure lies. I have been glad of the chance to write an article on the topic, because as an avowed adherent of the plan, I may with safety study what the moving picture cannot do in the field of English as well as what it can do. I am even glad that the first experiments are to be made in other fields than English, because it will give us, who deal with the "imponderables," and who can thereby the more easily go astray, a chance to watch the men of facts at work, to see how the motion picture is used to illuminate the textbook in geography before we rashly supplant *David Copperfield* or *Macbeth* or the textbook in Composition by films.

Cutting down the list of the textbooks will, indeed, be the first temptation in all fields. Many will say, "Since we can show the thing itself, why use textbooks at all?" It is conceivably possible that a gifted and learned teacher, with all the time needed at his disposal, could in some subjects dispense with the textbook and rely on the picture. But I think not. To begin with, education must inevitably present, as a part of its substance, abstractions, generalizations, principles. The mere quickness of the moving picture and the spoken word would hamper us fatally in gathering such things to our intellectual bosoms. The pupil would grope hopelessly after statements from the desk; his eyes and his ears would fight each other if the processes of picture and talk were carried on simultaneously; and in no event could he give, without the textbook, the continued reflection without which human beings only half apprehend any statement above the grade of "Butter and eggs cost double what they did four years ago." And, to speak frankly, the gifted and learned teacher does not grow on every bench; most of us need the stiffening from without which a good textbook supplies. I, for one, after twenty-five years of college teaching, find it better, in all except small ad-

vanced classes, to use a textbook, and make of myself the index-finger that points out the significance of it all in large and in little. The motion picture, then, is not likely to supplant the textbook. But it will most powerfully supplement and enforce and vitalize it. It will, for the first time in educational procedure, take heed of the fact long known and never used, that, while some of us think in words, others think in pictures.

Let us now engage directly with the questions, what the motion picture can do for the English class; what it cannot do. I shall make no attempt to cover college work, or to deal with composition beyond pointing out that a mine of subjects for themes is here opened, and that the motion picture offers a chance for the much needed *liaison* work between English and other subjects. An article could be written on that subject alone. I shall confine myself to the use of the moving picture in school classes in English Literature.

If, in general, it is dangerous to try to supplant books by moving pictures, it is trebly so in English Literature. It is fatally easy to neglect the truth that, generally speaking, a moving picture can give only the facts of the case in action, plus whatever elemental emotion these facts generate. It is hopeless to expect that many a film of *Hamlet* and *David Harum* will not appear. Narrative poetry, too, will be a mine for first endeavors in this vein. Such poems as the *Wreck of the Hesperus* will instantly be "filmed" if not too expensive; Robin Hood and the treacherous nun, *Young Lochinvar*, *Paul Revere's Ride*, the *Charge of the Light Brigade*, *King Robert of Sicily*, and *Sohrab and Rustum* will appear in animated black and white. Gray's *Elegy* is foredoomed to a brief and inglorious career on the screen. We shall be playing in great luck indeed if no one "films" the *Ode on the Intimations of Immortality*, the hero striding to the center of the screen "trailing clouds of glory" as he comes.

Now in "filming" brief narrative poems, no real harm will be done, and a deal of good may result. One of the legitimate functions of the moving picture in English classes will be served, that of illustration. It cannot be denied that a booted and spurred *Paul Revere*, actually leaping on a champing steed, is a more potent realizer of the text than the woodenly drawn print that seems the highest possible reach of the illustrator's art. Thousands of similar cases will appear, and the lad who glowered dully over the printed page will go back to it with a new sense of its vitality, especially if he be of the "picture thinking group."

A question of when the film of *Paul Revere's Ride* should be presented, at once arises, however. I take it for granted that, in the case of short poems, no one will try to make the film replace the poem. Shall it be shown before or after reading the text, simultaneous picture and poem being out of the question? I am unequivocally for reading first, picture second. The mean scraps of dull and sentimental wording with which the commercial moving picture explains its scenes are not for schools and literature. *The motion picture of Paul Revere will be given in the school room to increase appreciation of the poem.* Read first; next, see the picture. Then, if you like, re-read the poem. And pick poems which are really capable of vitalization by an animated illustration. I am not sure, for instance, that Browning's "*Incident of French Camp*" would be vitalized in the film.

“‘You’re wounded!’ ‘Nay,’ his soldier’s pride,  
Touched to the quick, he said:  
‘I’m killed, Sire!’ and his chief beside,  
Smiling, the boy fell dead.”

Will it really make this strike deeper to see an actor tumble down beside a man dressed like a caricature of Napoleon? I doubt it. On the other hand, I should have liked, when a boy, to see a picture of *How They Brought the Good News From Ghent to Aix*. Indeed, I have always wondered why the commercial companies neglected that, and a thousand other “good bets” that lie open to them in literature. Is it too much to hope that the taste of moving picture audiences may be improved if the educational picture shows that action and impossibility, sentiment and “slop” are not necessarily synonymous? Let me not be misunderstood, however, to mean that only action that is relatively common place should be chosen. I think that *La Belle Dame Sans Merci* would make a charming film. Its very simplicity of action makes it suitable. So far, the producer of commercial “movies” has sought either tumult or sentimentality as his motifs. I have a suspicion that another generation will see quieter moving pictures, pictures that stimulate imagination instead of replacing it.

Why not make motion pictures of plays take the place of plays entirely in the English class? Well, melodrama may be so treated, for the action can be forecast from movement to movement almost without words. It takes no long speech to unfold the sequence of events that will follow on the heels of the stealthy opening of a window and the appearance of a man who flashes a torch-light triumphantly at the little safe in the corner. And if one can be content to drop overboard as impedimenta all the ideas that accompany the action in a good play, the picture will do as a substitute. But if the play is one of ideas and dialogue, the task is impossible. Show me the man who can make a *good* silent drama of *The School for Scandal*! *She Stoops to Conquer* perhaps, but not the *School for Scandal*; *Henry V*, perhaps, but not *Hamlet* or *Macbeth*. *Henry V* is a possible motion picture because it is a Chronicle play; *Hamlet* is an impossibility because, though there is plenty of action, there is more cerebration. *Macbeth* should not be used for a picture because, though the action is sufficient, it would be a dastard’s act to take away the poetry. The loss would be too great. Yet Shakespeare would lend himself better to the silent drama than most modern playwrights. The motion picture is not primarily a play, it is a narrative; and the Elizabethan drama is far more nearly “just a story” than the modern drama, or any play, indeed, written after 1642. Motion pictures of dramas should not, then, be given in their entirety in the class-room. I will discuss at a later point what appears to me a desirable method of using the film in the case of plays.

As for novels, it may be stated flatly that they make poor plays, even on the regular stage. For the screen, even the commercial screen, the older novels are normally too long and too complicated in action. Moreover, the school picture will not be allowed the length of time that is accorded to the commercial film of Jack London’s *Sea Wolf*. It must be briefer by far. We shall not get

beyond the "period" limit. By no conceivable process of compression can *Adam Bede*, or *Oliver Twist*, or *Henry Esmond* be given adequate or even consecutive presentation in an hour. If the motion picture accentuated the habit of thinking in bits, of a goat-like leaping from point to point which is the bane of the school-room, it would be, not a help, but a menace to be cursed with bell and book and candle.

Moreover, normally the best part of a novel cannot be transferred to the screen. In the case of such tales as *Treasure Island*, indeed, a coarsened, syncopated representation of the plot can be given, but that is all. And this is not the function of the educational motion picture. In the case of more delicately conceived novels, even when as in *Henry Esmond* action plays a relatively large role, the loss is far greater. We could easily film the duel between Mohun and Lord Esmond. But how could the film give the delicate strength of the scene in which young Henry learns that his dying benefactor has confessed that the title and estate belong to Harry?

"At the end of an hour—it may be more—Mr. Atterbury came out of the room, looking very hard at Esmond, and holding a paper.

"He is on the brink of God's awful judgment," the priest whispered. 'He has made his breast clean to me. He forgives and believes, and makes restitution. Shall it be in public? Shall we call a witness to sign it?'

"God knows," sobbed out the young man, 'my dearest Lord has only done me kindness all his life.'

"The priest put the paper into Esmond's hand. He looked at it. It swam before his eyes.

" 'Tis a confession,' he said.

" 'Tis as you please,' said Mr. Atterbury.

"There was a fire in the room, where the cloths were drying for the baths, and there lay a heap in a corner, saturated with the blood of my dear Lord's body. Esmond went to the fire, and threw the paper into it. 'Twas a great chimney with glazed Dutch tiles. How we remember such trifles in such awful moments!—the scrap of the book that we have read in great grief—the taste of that last dish we have eaten before a duel—or some such supreme meeting or parting. On the Dutch tiles at the bagnio was a rude picture representing Jacob in hairy gloves, cheating Isaac of Esau's birthright. The burning paper lighted it up."

To rely on free use of a handkerchief, as the screen actor would to register his grief, would not merely wrong Thackeray; it would wrong the pupil, would coarsen him by dulling his finer edges. Again and again it must be reiterated, the motion pictures can kill imagination. Among other functions, English Literature has the task of stimulating and making finer the imagination of a rather work-a-day generation.

What remains, then, if we rule out whole classes of books as unsuitable material for the silent drama? So much that it is difficult to pin oneself down to a reasonable compass. But two principles begin for me to emerge. The first is, the moving picture must not be used in schools for amusement only, or as a sup-



planter of the finer things in literature. The second is, that it can and should be used to vitalize and bring home to youth material that youth is too prone to regard as "mere literature." To do this, it must be used as a series of glorified illustrations.

These illustrations may be of two sorts. The first consists of representations of the action of entire brief narratives, or of crucial parts of long narratives. Examples of brief wholes suitable for films have already been mentioned. The list is infinitely extensible. And, by a proper use of "traveling libraries" of films, an immense number of excellent narratives can be brought before the schools. They can be either prose or verse—*Young Lochinvar* or *Rip Van Winkle* will do equally well. As for crucial parts of longer narratives and dramas, the entry of Henry V into London, in the play of that name, or the stirring scene at the court of the Duke of Burgundy, in *Quentin Durward* will serve as examples.

The mention of *Quentin Durward* brings up the second sort of illustration I have in mind. There is a wealth of picturesque detail as to localities, customs, and manners which will illuminate material for which our youth have no background.

"The stag at eve had drunk his fill  
Where danced the moon on Monan's rill  
And deep his midnight lair had made  
In lone Glenartney's hazel shade."

carries some definite picture to all but idiots. Yet American youth knows not the Scottish hills and lakes, and to put these hills and lakes before him visibly is to get body into the lines. As for *Quentin Durward* a bit of the life of the French court of Louis XI projected on the screen would help enormously. If I were reading *Beowulf* with a high school class, I should not care for a moving picture of Beowulf fighting a pasteboard dragon. But I should much desire a picture of Beowulf and his men going to Heorot, and of the banquet in the hall, with the King at the long upper table, the harper at his side, and Wealtheow the Queen moving courteously among the foreigners at the lower tables; their swords above them on the wall, the tables profusely loaded, and the mead cup passing from hand to hand. If, to come to a scene and time far remote from *Beowulf*, I were reading *The Courtship of Miles Standish*, I doubt if I should want the story told on the screen; it is not a motion picture story. But I should like a visible record of the day of a Puritan in Plymouth in 1621. If I were dealing with the Miracle plays, I should not greatly care whether I had a film of the *Second Shepherd's Play* or not; I should like a film of the way an English town turned out to see the Miracle plays, and of the passing pageants. Similarly, I do not care whether *Robin Hood and the Monk* is filmed or not. But I would like a ballad audience in a hut or on a village common. And while I should object to a motion picture of *Hamlet*, I long for one of an Elizabethan audience at the *Globe*.

The list of examples could be made vast even under the restrictions I have proposed. I dare say the restrictions will seem to many to narrow the field unduly. I think not. But whether they are right or not, some differentiation

between the educational motion picture and the commercial "movie" must be worked out, to the end that the good of the scheme may be secured without corresponding and overwhelming evils. I end with the points I have already made several times. First, the motion picture in the English class cannot be a substitute for work, or, second, a substitute for books and reading. Third, it can be made a powerful aid to reading. Properly used, it will stimulate imagination as well as give information. It may even help to improve the vilely vapid commercial "movie." For it is only a matter of making people know that good plays are more amusing than bad ones. In any case, we of the schools must hold to excellence. Better dead routine than false flashiness. But it need not be either. Use the motion picture to catch your youngster's attention, to give him facts that he will find significant, to drive his imagination toward big and fine and true things. It can be **done**.

LINDSAY T. DAMON,  
*Professor of English,*  
*Brown University.*

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## Preliminary Announcement by the N. E. A. Press Service

"The next annual meeting of the National Press Association will be held at Salt Lake City, Utah, July 4-10, inclusive. The program is nearing completion and will be printed in the next issue of the N. E. A. Bulletin.

"A feature of the program will be the Congress of Boards of Education on Thursday, July 8,—forenoon, afternoon, and evening. Theme: 'Financing and Managing the Public Schools.' Members of school boards, state, city and county superintendents, and educational experts will take part in the discussions.

"The Congress will meet in two sections on Thursday forenoon, one section to consider rural school problems and the other to consider the financial problems of the city school. It will meet in one body Thursday afternoon and Thursday evening. Several eminent men and women have accepted places on the program.

"The Council of State Superintendents will hold an important two days' conference preceding the general sessions. The National Council will hold its sessions on Monday, July 5.

"Sunday, July 4, will be designated on the program as Musical Sunday. The program of patriotic music under the auspices of the teachers and musical associations of Salt Lake City and the State of Utah means that musical Sunday will be one of the great days of the convention.

"All general sessions will be held in the world-renowned Tabernacle of the Mormon Church.

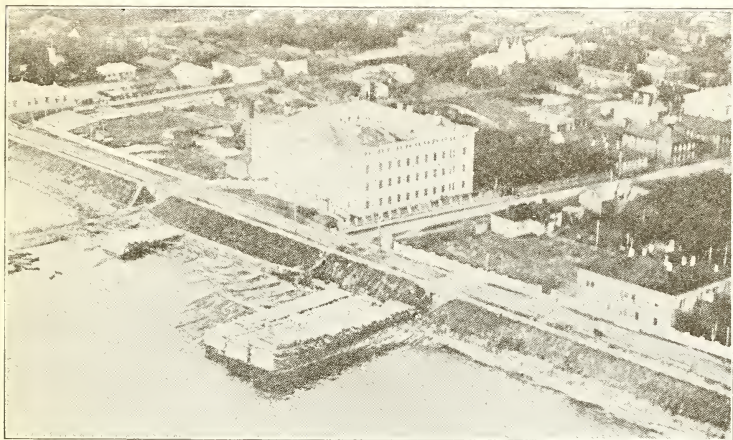
"The preparation of the program for this great meeting is in the hands of the President of the Association, Mrs. Josephine Corliss Preston, who not only takes into account in the program the actual needs of the hour but looks ahead to shape readjustments and tendencies for the future welfare of our schools."

A more detailed statement of this program will appear in the May number of VISUAL EDUCATION.

## Visual Education in North Russia

**I**N the course of a year or so of contact with the people and schools of North Russia—the section lying east, south and west of the city of Archangel—the observer is impressed by the intelligence of the bulk of the people and by the existence of an educational system making extensive use of visual teaching.

While these northern peasants are not educated in the sense that we are accustomed to the word, they have brains in their heads and learn readily when they have a chance. For many years past each little village or group of villages has had its school house and its trained school teacher. Theoretically every child



Aeroplane view of Technical Institute in Archangel, the "School City" of North Russia. The smaller building in right foreground is the Navigation School.

is required to attend at least three years and receive a minimum of 100 hours of personal attention by the teacher in that time. The result has been that it is rare to find a North Russian peasant between the ages of ten and thirty-five who cannot read and write to some extent.

As a matter of fact, the troublous times have limited the village schools at present to the three years course. But in those three years the child may learn more that is really useful to him and be further along in preparation for his career as farmer, woodsman or riverman than does the American child in the first five years spent in preparing for his future in America. And this is due to *visual education*, which is practiced from the first grade in the village school clear up to the end of the most technical courses offered in the institutes of Archangel, the "college town" of North Russia.

Of course, this is not "movie" visualization, altho there are cinematographs in Russia. The closest approach to the motion picture is a revolving

view stereoscopic arrangement used in the Technical Institute. But the visual education, which had its foundation in the bookless years of the dim past, and which has been of immense help in the limited North Russia public school work, is conducted by means of pictures, charts, relief models, stuffed figures and samples without number. These apply chiefly to the shapes of plane and solid figures, the simple geography of the world and more analytical geography of Russia, the history of Russia and of the Russian church, the chief industries, raw materials, processes and finished products of Russia, the animal life of Russia, methods



Yemetskoe, Archangel Province, North Russia, before the Bolsheviks took it. Village school is second house from left.

of transportation and the type of people predominating in the larger countries of both hemispheres. How many children at the end of the fifth or sixth grade in America know whether the rectangle is plane or solid, whether South America is larger than North America, whether Texas raises most value of wheat or of cotton, what were the successive waves of population over-running the ranges of the North American Indian, and so on through the list of items of the previous paragraph as they might be applied to the United States? We do not mean to leave the impression that all or any large part of the North Russian kiddies can remember all such things regarding their own country, but they know some of them, and have been shown concrete examples and pictured processes and scenes to such an extent that they are prepared to see and hear more without surprise and with a degree of understanding that is sometimes startling when one remembers that they have never traveled or met many travelers.

Fish is a staple in North Russia. The average ten-year-old boy can tell you of the fish and the ways of catching them, although he may never have been away



from one river village where only a few varieties are caught and only a few methods used.

The average girl of twelve can tell you much about fabrics, how they are made and how to judge them, whereas the home industries of her village comprise only certain sorts of spinning, weaving and dyeing.

One cause of the widespread use of visual material in the schools of Russia is the training that is given the teachers in the normal school. The future teacher is practiced in the use of maps, models and charts; but what is more important, he is taught to make them. In one normal school, preparing young women to teach in village schools, the manual training classes spent most of their time in preparing wooden models to be used in teaching. The art classes were engaged in enlarging maps and pictures from pages of a book to be used as charts. In one room the students are making models from plaster-of-paris. The science students were preparing an exhibit to be hung upon the wall, illustrating the crops of Russia. The aim was not alone to teach the subject matter in question. The students were skilled in producing material of this sort. The result was that the young women, going out into the villages, were able to develop visual education, even where there were no charts, maps or models. They made them themselves. The result was that the children were better taught, the school was better equipped and the teachers, feeling a proprietary interest in the school, were more contented and happy.

The Russian school child is accustomed to learn from articles placed before him and the teacher knows how to talk to him so as to help him learn. From visual education as they have used it, to visual education by motion pictures, is but a step, and a logical step. The foundation has been laid through natural development of educational methods in the schools. When Russia is again quiet there will be a wonderful field for American enterprise in this line.

C. J. PRIMM,

*Society for Visual Education,*

*Chicago, Ill.*

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## Pageantry Notes

*(This Department will print accounts of important pageants in progress or in preparation at various places throughout the country. Communications are invited. It is desired that announcements be brief, but as definite and detailed as possible.)*

THE first two pageants described here were given in March, each one celebrating an occasion of great historical interest. The paragraphs are quoted from advance notices sent out by the authorities in charge.

*PILGRIM FESTIVAL.....at Boston, Mass.*

*Department of Publicity, Boston University,  
688 Boylston Street.*

"Over 600 people are to take part in the Pilgrim Festival to be given by



Boston University on March 19th to Commemorate the tercentenary of the landing of the Pilgrims. This festival is in place of the annual Klatsch Collegium, which is held in the College of Liberal Arts.

A masque dealing with the life of the Pilgrims, in which over 70 people will participate, will be given in Jacob Sleeper Hall and will be the central point of interest. The masque, which was written by Miss Esther W. Bates of Roslindale, Boston University, '06, who is a pupil of Prof. Baker of Harvard, will consist of three episodes.

Episode One deals with the life of the Pilgrims in Merrie England, showing their persecution and final departure from their homes for Holland. During the interlude between the departure of the Pilgrims for America and their arrival in the land of freedom, comes a very effective dance of the elements by twenty of the University girls, portraying through music and interpretative dancing the fury of the wind, thunder, lightning and rain, that greeted the Pilgrims on the cold, New England shores.

Indian life and Indian war dances are the features of the Second Episode. In spite of hardships and the thinning of the ranks, the brave Pilgrims celebrated their first Thanksgiving in the new land, with Massasoit and his braves as guests. One interesting incident in this episode is that while the elders are holding a prayer meeting to give thanks for their preservation, the younger members of the colony resurrect a smuggled fiddle, and enjoy a country dance.

In the midst of the Thanksgiving dinner, a ship arrives from England, bearing the charter for the new colony and amid great rejoicing the formal establishment of New England is announced.

The last Episode deals with modern Pilgrims to America. All nationalities, Italian, Swedish, Norwegian, Syrian, Chinese, Japanese, Alsatian, Bohemian, Roumanian, Serbian, Armenian, Turkish, Hindu and Russian, are represented in the colorful pageant. As the climax, the Goddess of Liberty reveals herself to them as the leader of both the pilgrims of 1620 and the new pilgrims of 1920.

Dvorak's "New World Symphony" and Mac Dowell's "1620" will be the musical themes of the masque and the various emotions and experiences of the Pilgrims will be interpreted through special dances under the direction of Miss Rachel Hardwick, director of physical education for women.

During the festival each room in the College of Liberal Arts will be given over to various divisions of the University for headquarters. The Woman's Graduate Club will entertain in the Colonial Room with Pilgrim tableaux under the direction of Mrs. Walter Hartstone of Brookline. There will also be a Dutch room and an Indian room.

A procession including all the students, faculty and administration department of the College of Liberal Arts will proceed to the Crown Room, where the Queen of the Festival will hold court.

It is expected that fully 1,500 guests will be present at the festival and they will be invited to join in the revels of the university students.

Miss Dorothea Truitt, of Brookline, B. U. '21, who is the president of Gamma Delta Society, the social club of all the girls in C. L. A., is student head

of the festival committee, being Secretary of the Executive Committee. Mrs. E. Charlton Black of Cambridge, Advisor of Women at Boston University, is coaching the pageant in conjunction with the author, Miss Bates."

*MISSOURI PAGEANT.....at Columbia, Missouri*

"On March 25th occurs the Centennial Celebration of the State Historical Society of Missouri and the pageant is to be a feature of the occasion. It is being given under the combined auspices of the State Historical Society of Missouri, the Columbia Commercial Club, and the University of Missouri. The performance will take place in the Hall Theatre at Columbia in the evening of the 25th.

This pageant will depict the history of Missouri during the last 200 years; including the Spanish, French and Pioneer Periods, the Civil War period, and coming down to modern times. It will be divided into six episodes with historical interludes between. Four hundred persons will take part and 1,000 costumes will be used.

The day itself is a notable occasion, as it celebrates the hundredth anniversary of the passage of the Missouri Enabling Act. Numerous distinguished guests are expected to be present, including a lineal descendant of Lafayette as representative of the French nation at the Centennial."

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### Other Important Pageants Now in Progress or Soon to Take Place are Noted Below

*PARTHENIA.....at Berkeley, California*

April 8th is to be the date of the annual festival dedicated to the spirit of womanhood and produced by the women students of the University of California. This is a very beautiful and impressive spectacle, with elaborate costumes, processions and dancing. It is given in the open air in the Faculty Glade, a most charming spot on the university campus.

*MASQUE.....at Claremont, California*

A very elaborate bit of pageantry is given annually by the women of Pomona

College, which is known as the May Masque. It is given out of doors in a natural theater with a background of live oaks and long vistas which add greatly to the effectiveness and charm of the play. Motion pictures of previous Masques have been made which lose very little of the beauty of the originals. The date for the Masque this year is May 15th.

In the same setting will be given on June 18th the annual Senior Play by the Senior Class of Pomona College. Further mention of this play will be made in a later issue.

*PAGEANT.....at Kent, Ohio*

A most interesting and valuable piece of work is under way at the Kent State Normal College. Classes in English are at work writing a pageant portraying the development local community from Indian times down to and including the

# Among Other Things They Say

*A City Superintendent in Tennessee says:*

"Copy of your magazine has been received. It is a genuine pleasure to enclose a dollar. I am delighted with the launching of VISUAL EDUCATION."

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*From a New Jersey Principal:*

"Received the sample copy of VISUAL EDUCATION. Decided to take a chance. Here is your dollar. Do your prettiest."

*An Illinois teacher writes:*

"Your complimentary number of VISUAL EDUCATION received. Have read its articles and my check for one dollar is material evidence of my approbation. It is the logical way to teach."

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*This from a teacher in Maine, who is also a member of the Advisory Committee of the National Board of Review of New York City:*

"I can but poorly express to you my joy in receiving the initial copy of your valuable publication. It gives me the greatest pleasure to enclose the dollar that I send with the printed slip. I shall anxiously await the next issue, as I know of no other magazine dealing with the subject in which I have for so long a time been deeply interested."

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*An Attorney at Law of the Central West writes as follows:*

"I am profoundly interested in the whole subject and especially in its practical development, in the planning of the films, methods of making them an educational factor, and, in general, in "putting over" the plans, as the saying goes. I like the idea of making the magazine a field for discussion, as in that way comes development. I should be glad of an opportunity to enter actively into the movement. . . . The magazine is wonderfully suggestive. There are so many lines of thought that come to mind that it is impossible to marshal them all in one letter. Its field will broaden from month to month, I should think. It has ground to break in many directions."

*An Iowa Superintendent of School says:*

"Good luck to you in having the nerve to start such a magazine for a dollar in these days of high prices."

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*From a Michigan Principal:*

"Visual Education is a subject in which I have been and am tremendously interested. Hope soon to hear of progress made by committee on History and the one on Citizenship."

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*A Minnesota Superintendent writes:*

"Allow me to congratulate the founders of this magazine for their spirit of loyalty and patriotism to the educational system of the United States. We need more broadminded men who will do something without looking first and foremost for financial gain. The educational world needs just such a magazine as you are endeavoring to put out, and if educators interested in visual instruction will stand back of it and send in their subscriptions I predict that it will soon rank with the most important school magazines of the day."

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*This from a California High School Principal:*

"I believe in visual education for our schools, but want to see it introduced not as a mere diversion but as an aid to teaching students to think. I hope you will conduct a special department for high schools. In California many of us have decided views on this subject which we hope to see realized. Success to you!"

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*An Illinois Principal says:*

"There is no reason for a failure for this kind of a publication by such men as are putting it forth. I have reason for believing in your success and congratulate you on getting into the field."

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*Here are two letters from schools which have already sensed the possibilities of visual aids in teaching and have made promising beginnings in this direction.*

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REASONS  
WHY



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To conserve the **joy** of child life.

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To have a System which is **usable**.

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*Hundreds of other schools have taken similar steps. We want to hear from them. We shall be glad to print such letters as these in every issue of Visual Education to the limit of our available space.*

"Your first issue has been read with interest and especially so as this institution is emphasizing that phase of education. The need of such training was first brought to our attention through our military work. We found by numerous tests that very few of the cadets were able to place on paper the prominent landmarks that they had passed on a tactical walk of even one mile, and when taken to the crest of a hill and given a few minutes to view the landscape in a given direction were unable to reproduce these impressions in the form of a sketch with any degree of accuracy. It was interesting, however, to see that wonderful results were secured with a small amount of training. We have used the projector in our classroom with such satisfactory results that we plan next year to emphasize it strongly in every department possible."

Colonel ROYAL P. DAVIDSON,

*President Northwestern Military and Naval Academy, Lake Geneva, Wis.*

"The aims and plans of your work as laid out so definitely are bound to bring success, for they will lead to the proper use of the motion picture in school work, as there is a tremendous opportunity and demand for educational advance through the development of films upon an educational basis.

There is not even the slightest doubt in my mind as to the incalculable benefit to be derived from the use of the motion picture in school work if the material is classified according to definite aims, correlated with the regular text or school subject, arranged according to a system and carried out through well-developed plans and methods.

The Philadelphia school of which I am supervising principal is located in one of the best residential sections of

that city, and near its most northern limits, there being no motion picture theaters within a radius of one and a half miles. On two occasions I took two hundred pupils, large and small, to the central theaters to see 'Jack and the Beanstalk' and wonderful colored motion pictures of Alaska. The good resultant from the two trips repaid us fully, not only in the pleasure experienced, but in the interest displayed in the subjects depicted.

Our school has no auditorium or we would have started motion picture work for ourself, but we have now had offered to us the use of the assembly hall of one of the neighboring churches and the use of their motion picture equipment (one of the finest in the city) to carry out our plans. These are not yet completed, but I have gained a great deal of useful information from the article of W. Arthur Justice entitled 'Visual Instruction in the Public Schools of Evanston, Ill.'

I am most heartily in accord with this 'New Movement in American Education,' and I believe most optimistically with you that 'the future awaiting the present efforts toward visual education will be more brilliant than the dreams of its most ardent devotees.' So here's luck and best wishes galore."

ELIZABETH B. PENDLEBURY,

*Supervising Principal Ellwood School,  
Philadelphia, Pa.*

*The two following letters voice an exceedingly widespread demand. VISUAL EDUCATION means to make a complete and satisfying answer, but it will take time. Our May issue will contain a definite plan of procedure for supplying our readers with this information, and a beginning will be made toward listing usable films.*

"This is a wonderful little magazine. However, you have a great task before you if you supply the schools with information concerning suitable films for entertainment and educational purposes. Hope you succeed."





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*An Illinois High School Science Teacher.*

"I am one of those animals that has to teach about five hours a day and handle the executive work beside, so the valuable copy of your magazine was pigeonholed for some time.

"We have a standard projection equipment but the chief trouble that I have is getting film that will vitalize our work. The best that I have been able to do for the history is a series of Chapin's *Lincoln*. Good, but I have not been

able to get anything for other parts of history. For English, *The Passing of the Third Floor Back*, and *The Goose Girl*. Enough said. For chemistry a little on one or two subjects. For the Dairy class a film that was frankly advertising Borden's Milk.

"For the present, if not permanently, would it not be one of the best things for all of us if you would run a department to help us out with these problems? I should certainly appreciate some help quickly."

*A California High School Principal.*

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CHICAGO

*Many letters, like the two following, emphasize the need of service to the rural schools. We want to assure our readers that VISUAL EDUCATION realizes most keenly this need and hopes to do much toward meeting it. Visual aids in teaching are of great value everywhere, but supremely so in the isolated rural school. It has our affection and shall receive of our best.*

"I am interested in the Visual Education movement and am glad to find a journal devoted exclusively to it. I have read every word of the January number sent me and am highly pleased with all the articles.

"I am heartily in sympathy with you and the whole movement and hope to see it grow to include all the village and rural schools as well as the city schools."

*An Illinois Principal.*

"A copy of VISUAL EDUCATION came to me just by chance and received a most

hearty welcome. Since the beginning of 'movies' time I have thought the motion picture could be used to great advantage in the study of geography and nature work, especially in the rural districts, where pupils must depend entirely on text books, magazines and papers for information. The average rural pupil when leaving school cannot read any periodical understandingly.

"After reading VISUAL EDUCATION I thot what an excellent thing it would be if a 'movie' machine could be established here for educational purposes only, but I am totally ignorant of the cost of such an enterprise and where to get information, so I shall be very, very grateful to you for your advice on the subject and any information regarding it. If too expensive for one district, perhaps I could interest the county superintendent and establish a machine at the county seat."

*A Colorado School Board Secretary.*

## A Word or Two More

THE movie makers pour forth "Educationals" which are loudly offered as the long-awaited panacea for the human intellect. These are generally entertaining, sometimes genuinely interesting and instructive, and, of course, are "educational" to a greater or less degree; for every experience that reaches any one of our senses from the cradle to the grave is educational. The baby that touches the stove, the youth that reads printed rubbish, and the adult that buys oil stock—all learn something. Without question, the dime novel has wielded an immensely "educational" influence; many a phrase therein has doubtless been enlightening to the reader—being what he was—may even have given him new food for real thought, an impulse after something bigger and even something better; yet this hardly puts the authors and the publishers of said dime novels into the class of "educators" as the term is commonly understood.

The comparison is, of course, extreme. Perhaps a more gentle and just parallel might be drawn between a great textbook company and the publishing house that popularizes knowledge. At hearing the propaganda of the latter, one wonders how so much ignorance can still be left in the world when a mere \$4.00 or \$8.75 or \$9.92 will buy an "Encyclopedia of All Worth Knowing," "The Juvenile Educator," "Youth's Treasure House," etc., in one volume or many, delivered free at the door, a monthly magazine subscription thrown in, the whole containing all needful mental nourishment for a family of seven from infancy to old age. Only from the ads of such companies can we learn the deep sincerity of their intentions, the urge they feel in their souls toward the salvation of the benighted minds, the uplifting of the race, etc. Many, to be sure, who do not read their advertising, imagine that such efforts are not of great importance and suspect

(Concluded on Page 46)

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### Pageantry Notes (Concluded)

establishment of the school at Kent. Four acts of the pageant show the Indians, the Pioneers, Business Development, and the Founding of the School. Home life, amusements and typical occupations are shown in each division.

From two to five hundred people will constitute the cast and a natural hill on the campus is to serve as the setting. If the composition and preliminary arrangements can be satisfactorily completed in time, it is planned to produce this pageant the last of May or the first of June. If the time proves too short for this, the performance will be postponed to the following year.

### A Word or Two More (Concluded)

that the first purpose behind such activity is to show a profit; the second purpose, to make that profit indefinitely larger, etc., etc.

But, seriously, the rising generation must have its movies. We believe it is infinitely better for schools and community centers to show all that is possible of the less objectionable material now available than to leave the theatres entirely alone to exercise their mighty influence upon the plastic

minds and hearts of America's children. We cannot wait for the perfect educational films, which will surely come. The demand is here ahead of the supply. It must be met. When bread cannot be given to the hungry, even crackers are comforting and helpful.

VISUAL EDUCATION is at work on this problem. We hope that the visible results of our labors in the May issue will not be disappointing.—EDITOR.

# VISUAL EDUCATION

A Magazine Devoted to the Cause of American Education

Vol. I.

MAY, 1920

No. 3

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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President  
FOREST R. MOULTON, Secretary

NELSON L. GREENE, Editor  
HARLEY L. CLARKE, Manager

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CHICAGO, ILLINOIS

# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

NELSON L. GREENE, Editor

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Volume I

MAY, 1920

Number 3

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## Ideals and Activities of the Society

The Society for Visual Education was founded for the fulfillment of an ideal, and whatever it may accomplish will be a consequence of that ideal. That ideal is simply to make the next generation and all succeeding generations of American citizens much better than the present generation—better in their knowledge of their own country and its history; better in their understanding of and faith in its institutions; better in their preparation for and willingness to do useful work in the world; better in their mind, physique, and health; in short, better in all those respects which are essential for the establishing of prosperous and happy homes in a great free country. The whole organization of the Society for Visual Education and all its policies have been formulated for the accomplishment of these ideals.

Fortunately the ideal of the Society is not the ideal of a single person, or of a few persons; it is the ideal of hundreds of thousands. Witness the names of those who are identified with the Society and are giving it the benefit of their counsels and assistance. The ideal of the Society did not originate in the mind of a single person. Even the main features of its policies, which are all for the purpose of accomplishing its ideal, occurred almost simultaneously to many. All this is interpreted as meaning, first, that the ideal of the Society is worthy and, secondly, that the plans of the Society are sound.

What are the plans of the Society? To seize on and to put into use the most important means, heretofore neglected, of accomplishing its ideal. The most important single means is the use of motion pictures. For whom are they being prepared? So far as the coming school year is concerned, for the millions who are in grades five to nine of the elementary schools, and who will not for the most part go beyond the elementary schools. They will make up the bulk of the population of the next generation, and they are much more in need of assistance than the relatively small number who will go on to high school and college. On what subjects are films being produced? On those which are most important for preparing the children of today to become useful citizens tomorrow. They are American History, Geography, Citizenship, and Health and Sanitation.

Dr. Bagley and his committee have produced and are producing films which bid fair to revolutionize the teaching of history. They show in a dramatic fashion the explorations and migrations of men, the difficulties encountered, the results achieved, and the reasons for the clashes of peoples.

Dr. Atwood and his committee are doing corresponding things for geography. They emphasize American geography. They lay no emphasis on the bounding of states and the location of their capitols; they show rather the sources and methods of production of our food, the materials for our houses from the raw state in forest, clay-pit and mine to the finished product, the origin and manufacture of our clothing, and our means of transportation and communication. Geography is seen to be concerned with the vital things of life and is correspondingly interesting, especially when the sea, the rivers, the prairies, the forests, the mountains, the country and the cities, and the process which take place in them, are all brought by moving pictures to the pupil, wherever he may live and however restricted his opportunities may be.

Dr. Beard and his committee are showing in a manner that one would not dream possible the innumerable ways in which our government serves its citizens, especially in local affairs, and the opportunities and duties we have of participating in that government.

Dr. Vaughan and his committee are preparing films for teaching the fundamentals of health and hygiene, and those lessons once learned, the benefit to the country, even from the standpoint of dollars and cents, will be almost beyond computation. Micro-photography in combination with motion picture projection is opening new and marvelous possibilities in the biological field.

All of these subjects are treated as systematically as books are written, and in such a way as to be of assistance to text-books, laboratories and all other good means of giving instruction now in use. They are treated as subjects, rather than from the standpoint of any particular books, and consequently the films will fit in with any good text-book.

In order to advance its ideals as rapidly and as effectively as possible the Society has established a department of educational experiments. The educational experiments are for the purpose of determining what types of films are of greatest educational value, how long the titles should be, how many reels should be shown in succession, how many times they should be repeated, whether they should be shown before or after the subject has been studied, how valuable they are for giving instruction as compared with the older methods, and innumerable related questions. It is doubtful if any other educational movement ever made so serious an attempt to establish itself on a scientific basis or to measure the value of its accomplishments.

It is clear from the foregoing that a great educational project has been launched. That is why the educational work is being directed by the foremost educators of the country. The fact that the so-called educational films heretofore produced have usually not been successful from the educational point of view need not be disquieting. One would not expect that a writer of sentimental fiction for a popular magazine would be able to prepare a good text-book

on American citizenship, or that a plumber would be a good dentist without education or experience as a dentist. And the fact that this project is serious means that the films which are being produced should not be used as those have been used which have heretofore been shown in schools from time to time. They are not for amusement but for serious work, just as laboratories, and shops, and domestic science equipment are for serious work. Every school should have one room equipped for motion picture projection, and individual classes should be taken to that room for their lessons involving the use of films just as they are taken to laboratories for certain lessons in science.

F. R. MOULTON, Secretary.

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## Notice!

VISUAL EDUCATION wishes to serve—not only as a national forum for the discussion of all phases of visual instruction activities—but also as a medium of information to our readers on any question pertaining to the field in general or to the work of the Society for Visual Education in particular.

All letters will be answered by this office directly or in a following issue of the magazine; or they will be turned over to the proper member of the Society for his personal attention and reply.

Correspondence is invited. Our readers are urged to identify themselves with the movement, at least to the extent of a two-cent stamp.

EDITOR.



# Motion Pictures and the Teaching of Drama

THE teaching of dramatic art is still in its infancy and labors under heavy handicaps due, in the first place, to a fundamental misconception of dramatic art and, in the second place, to a lack of means of presenting the art of drama directly to students.

The fundamental misconception in regard to drama arose from considering drama as a branch of literature. Indeed, for centuries, from Aristotle's time down to the eighteenth century, drama was regarded as belonging under the general classification of "Poetry," because plays were written in verse. Thus, tragedy was classified by critics with epic and lyric poems, on the ground that tragedy, like epic and lyric poetry, was "serious and in verse"; whereas comedy was classified with burlesque and satiric poetry because these forms were "humorous and in verse." When playwrights began to write dialog in prose, critics of dramatic art received a painful jolt which was long overdue. These composers of *Artes Poeticæ* found that drama no longer belonged in their domain. They protested loudly, but in vain, against plays with dialog in prose. As is usual, when creators of art really revolt against self-appointed guardians of art, the guardians or critics suddenly find themselves at least a generation behind the times.

Flung from their traditional position, the critics immediately took the view that drama, if not a poetical art, was at least a literary art. The fact that drama generally, though not always by any means, employs words in making its appeal, the fact that dramatic dialog could be published in book form was enough evidence for literary critics that dramatic art was theirs to criticize and judge.

Horace, though a poet who treated drama in an *Ars Poetica*, realized centuries ago that dramatic art makes its strongest effect, not through the ear, but through the eye; but the irony of it is, that instead of heeding this fundamental precept, critics insisted to such an extent upon Horace's statement that horrible actions should not be shown upon the stage that narration usurped the place of dramatic action for centuries.

In the eighteenth century, however, Diderot suddenly burst a bombshell among the critics by saying that when he went to a play he closed his ears, and if the play "got over" to him, he considered it a good piece of dramatic art. It was Diderot who first expounded the theory of stage pictures, of the grouping of characters in such a manner as to make an emotional effect and to tell a part of the story. He was the first "movie fan," the first to lay down the principles underlying the art of motion pictures!

During the next hundred and fifty years, the battle waged between the dramatists and the critics on the question as to whether the art of the dramatist was to be expounded and criticised according to literary or dramatic canons. The dramatist had ceased to be necessarily a poet. He now, more and more, ceased to be a writer. The younger Dumas proclaimed that a man without any

value as a writer could be an excellent dramatist. The dramatist became a playwright, not a play-writer. He made or built plays. The literary critics, however, sought to take revenge. They ceased to regard the modern dramatist as a producer of art. They announced the downfall of the theatre. The only trouble was that the theatre did not fall. Instead, the theatre became a very important element in modern life.

The last stronghold of reactionary ideas and influence against true dramatic art lies in our educational institutions. The teaching of drama as an art was rarely, if ever, attempted until the beginning of the twentieth century. Courses in which plays were studied were, at best, courses in literature or literary history. At worst, they were courses in morphology, scansion, and grammar. One first came in contact with Sophocles *Oedipus Rex* in a course of the latter type. One studied Shakespeare as a poet and philosopher. The dramatic art of Shakespeare and Sophocles was never mentioned. Except in rare instances, no plays less than three hundred years old were studied even from a literary point of view. If any one ventured to suggest that there was something in drama besides dialog he was generally met with the hopeless answer: "You refer to scenery."

Within the last twenty-five years many institutions of higher education have recognized that drama is an art by itself; and men have been appointed to teach dramatic art, not as a mere branch of literature, but as an art which, to make its effect, may call upon the painter, the electrician, costumer, the singer and actor, the musician, the writer and the producer or director who welds the separate arts of these persons into an artistic unity. Courses in which the principles of dramatic art are explained from this point of view are not necessarily courses in playwriting. Indeed, courses in playwriting should be restricted to very few students; whereas courses on dramatic art should be open to all persons who enjoy the theatre. Furthermore, such courses which aim to teach a correct appreciation of drama should, by no means, be restricted to institutions of higher education, but should be offered in preparatory schools and high schools. The impression that one gains from an investigation of the curriculum of our secondary schools is that dramatic art died with Shakespeare in 1616. The average person who teaches courses of literature in which plays are studied holds this view; and, as a result, the average student believes one ought to hold this view. Up to within a few years, the theatrical audiences have been self-educated. Probably not one person in a hundred thousand has been offered the same opportunity to cultivate a good taste for drama that he has had to cultivate a good taste for literature. The marvel of it all is that we have any dramatic art in America worthy of serious consideration, for the theatre can never be on an artistic plane above the audience. Therefore, it is at least as necessary to educate the millions of theatre-goers as it is to train the hundreds of would-be playwrights in our colleges.

In most large universities courses are now offered in playwriting or in dramatic art or along both these lines. However, the problem of teaching drama is not yet solved, as anyone who has given such courses will freely admit. The teacher of dramatic art now has entire liberty to set forth his views; but he is

still in a position similar to the one in which a teacher of harmony would find himself if the latter were deprived of all musical instruments and could only use textbooks of harmony and musical scores to illustrate his ideas. For instance, no amount of verbal description can possibly show the dramatic effect of the chorus in the opening scenes of *Oedipus Rex*. Few people ever have an opportunity to see one of Shakespeare's plays presented as Shakespeare intended to have it produced. Years of practice and study are necessary to be able to visualize the action described in stage directions.

In order to supply this lack of means of presenting the visual side of dramatic art to students "Workshops" and "Dramatic Laboratories" have been established. Valuable as such institutions may be for the person who is studying playwriting, neither time nor materials are at hand to present plays or scenes from plays illustrating the development of dramatic art over any extended period. The would-be playwright is given a very good opportunity to write plays under the direction of an expert and to have his plays worthy of production given an adequate trial in a dramatic laboratory; but the person who has no desire to study playwriting intensively, but who has a legitimate desire to study dramatic art of some period has no reliable means of visualizing any part of dramatic art which appeals to the eye. For this reason, as well as for the reason that those who teach drama are too often only teachers of literature, the study of drama has been almost a failure.

In this era of the motion picture the means of removing this handicap under which the teaching of dramatic art labors, is so simple, so obvious that it is strange to find the handicap still in existence. The technique of football is already taught in colleges by means of motion pictures which show far more vividly than could the observance of the actual plays the value and faults of certain formations. If teachers of drama had at their disposition films showing important scenes or even entire dramas, the visual element in dramatic art could be reproduced, whereas, at present the effect on drama of scenery, of the shape and size of the stage, of the grouping of actors, of the acting itself, etc., can be illustrated only by verbal descriptions and by an appeal to the imagination of the student.

Such reproduction of plays, however, should be made in purely theatrical and dramatic conditions. For instance, in making a film of *Othello* to illustrate Shakespeare's play to a class studying dramatic art, the street scenes should not be filmed in Venice, Shakespeare's scenes should not be edited or changed in the slightest degree. It would be necessary to make the picture reproduce the play as far as possible, just as it was originally acted on the Elizabethan stage. Then the play, or at least, striking scenes from the play, could be filmed as produced under conditions prevailing in the modern theatre.

If a class in a high school could be shown these films, Shakespeare would suddenly become a dramatist to the boy and girl who now consider him as a poet they ought to admire. Everyone who teaches Euripides could arouse an intense interest in his course if he could show a motion picture reproduction of Granville Barker's representation of *Iphigenia* or Margaret Anglin's production of *Medea*.

If, after reading the first act of *Cyrano de Bergerac*, a class were shown this act on a screen—and it would make a wonderful film without a cut or change—the whole class would re-read the act with intense interest and with a much deeper understanding of the drama. Surely, one does not need to point out what such films showing the development of the stage and drama, would mean to those teaching the few courses in dramatic art now offered in our schools; but one excellent result would be to make it possible for every college, at least, to offer such a course. The demand for instruction in the art of the theatre would become universal and irresistible. No one could question the utility or efficiency of such a course.

There are, no doubt, motion picture versions of many dramas both of the past and of the present, but these versions are practically useless for purposes of teaching the art of the theatre. They have been made according to the "picture book" method with result that they are constantly undramatic. It is all very well for motion picture artists to insist upon the pictorial element in their art; but the lover of drama has already realized that many a film is uninteresting because it gives far too much prominence to non-essential details. That part of a film which would be called *the exposition* in drama, is generally of such a length that it is boring to the spectator, and is artistically wholly out of proportion to the action. There is too much opening and closing of doors, too much entrance and exit. Also, just as drama suffered artistically for hundreds of years because Horace insisted it should contain five acts, motion pictures are suffering now because of the desire to lengthen the story to five reels.

These films, for laboratory purposes in the study of the drama, would of course lack certain features which tend to make motion pictures attractive, but they would also lack certain features which make many pictures inartistic. Such films would not all be fitted for presentation to the general public. They would not be made with that purpose in view; but one of the by-products of their production and presentation would probably be the proof, both for the producer and the audience, that motion pictures are too "narrative"; that the dramatic sequence of scenes is too often supplanted by an undramatic chronological sequence; that the so-called motion picture drama breaks unnecessarily too many laws of dramatic art. Both the art of the drama and the art of motion picture would benefit mutually.

If there were in every high school and university in this country a series of films showing the history and development of dramatic art from its origin to the present day, we could actually begin to teach and study drama efficiently. As a beginning, only twenty or thirty films would be necessary. If no motion picture producer can be persuaded to do education a great service by furnishing such material, some one else must be found who has vision enough to see that education in dramatic art carried on in this way will make theatrical audiences demand the best there is in drama. Then, and only then, will we always get the best in drama on the American stage.

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# Human Eyes and Optical Instruments

## III—Spectroscopes

EARLY in the construction of telescopes it was found that a simple lens brings different colors to a focus at different distances. Most objects radiate or reflect several colors. Consequently, if light of one color is in focus that of other colors is out of focus and the result is very unsatisfactory. In fact, Newton despaired of making satisfactory refracting telescopes and turned his attention exclusively to reflectors.

Two hundred years ago the unequal refraction of light of various colors was lamented by scientific men. It was supposed that this property of light seriously impaired optical instruments without offering any compensating advantages. Doubtless many supposed that if they had had the privilege of establishing the laws of Nature they would have avoided all such difficulties. Fortunately men have not made the laws of Nature. They might have made the refraction of all colors the same and thus have simplified the construction of telescopes, but in doing it they would have made impossible the spectroscope, an instrument as marvelous as any we possess and one which penetrates fields that were supposed to be inaccessible.

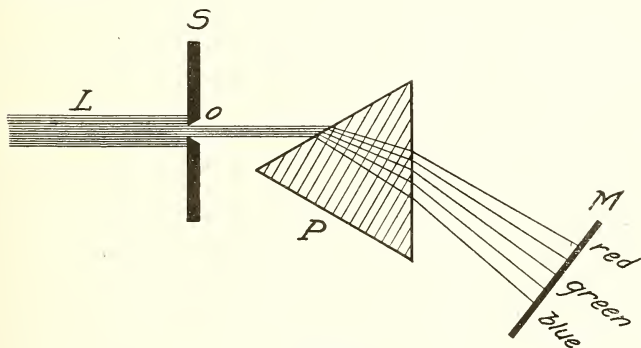


Figure 1.

The principle underlying the spectroscope is simply that when light passes through a refracting medium, such as a glass prism, the different colors are refracted, or bent, different amounts. Figure 1 illustrates the principle, though the indicated arrangement is not adapted to practical work. A beam of light *L* strikes the screen *S* through which there is a narrow slit *o*. A thin sheet of light passes through *o* and falls on the glass prism *P*. All the rays are bent downward, but, of those which are visible to human eyes, the blue are bent the most and the red the least. On emerging from *P* to a rarer medium the rays are bent down still more, again the blue being bent the most and the red the least. They fall on the screen *M*, each color in its own position.



How does it happen that such properties of light are valuable? The answer was not immediately evident for these properties were known for more than one hundred years before it was found that they could be made to serve useful purposes. Then Fraunhofer's reflections on the principles involved and his suitable arrangements of the screens, slits, and prisms led to the analysing spectroscope.

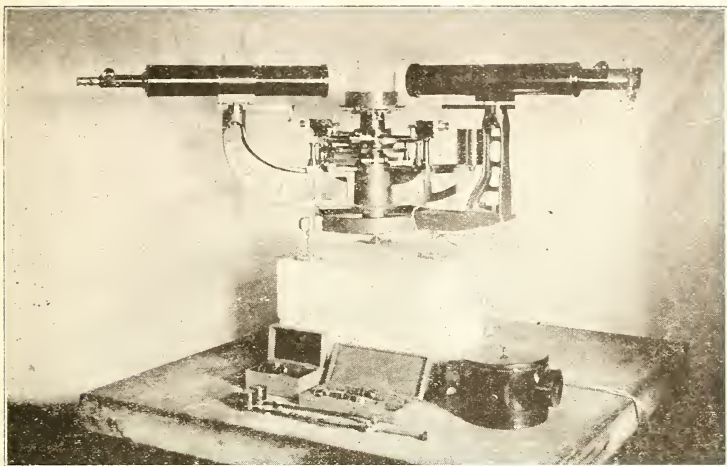
It is observed that after light passes through a spectroscope its different colors all emerge in slightly different directions and fall on the screen M at different places. So far it has been tacitly assumed that all colors are present. Suppose only part of the colors are in the original beam L; then only part of the screen M will be illuminated by these colors. That is, there will be on M bands of colors, corresponding to those in L, and intervening places at which there will be no light.

The spectroscope unscrambles light, but the eye is not able to analyze a mixture of colors into their separate components. For example, certain shades of blue and yellow mixed appear to the eye to be pure green. On the other hand, the ear has the ability to unscramble a mixture of sounds. In the midst of all the noises to which we are almost continually subject, we select those we wish to heed and ignore the others. If it were not so we could scarcely use a telephone. An orchestra leader hears every instrument separately and an error on the part of any one is instantly caught. This ability of the ears to analyze sounds is not confined to human beings, for a sheep will recognize the cry of her lamb in the midst of the bleatings of a flock.

The faculty the ear has of analysing sounds is of the highest importance for it enables us to distinguish, for example, the voice of one person from that of another. Even though two persons should speak in the same pitch and with the same loudness their voices would be distinguished because they would have many slight differences which the ear would detect. The result depends first upon the fact that no two tones produced by different persons or instruments are exactly alike, and secondly upon the fact that the ear can analyze and detect the differences.

From analogy with the production of sound it might be supposed that no two different kinds of substances radiate or reflect exactly the same kinds of light. Such indeed is the case if the substances are in the gaseous state. For example, sodium in a gaseous state radiates two kinds of yellow light which appear at definite places, near together, on the screen M. They are recognized by these positions rather than by the impressions of color the eye gets from them. No other substance radiates exactly these kinds of light. Similarly, incandescent gaseous lead, silver, iron, etc., radiate particular kinds of light and no two of them the same kinds. Some elements radiate only a few kinds of light and others a great many. For example, when iron is heated until it is in the gaseous state it radiates more than 2,000 kinds of light.

Since each element, when in an incandescent gaseous condition, radiates uniquely characteristic kinds of light, it is evident that the nature of the source can be determined by analysing into its fundamental parts the light which the source emits. It is necessary, of course, to determine in the laboratory what kinds



A laboratory spectroscope. The light enters through a slit in the tube at the right, passes through the prism in the center, and is observed through the telescope at the left.

of light each element radiates. Such determinations have been made for all of the more than 80 chemical elements and for many compounds which are not broken up by the heat necessary to get them into the incandescent gaseous condition. In order to determine the character of an unknown substance its light is passed through a spectroscope and the result is compared with the known spectra of the different elements. If the substance is a simple element its spectrum will be precisely that of some element in the list of spectra. If the substance is a mixture of elements the corresponding spectra will be found. The fact that the substance is a mixture ordinarily makes very little difference. It is clear that the spectroscope may be used for making a chemical analysis. In the case of metals it is often the simplest and most certain method known. The spectroscope will prove the presence of sodium when the quantity is so minute that it would entirely escape ordinary chemical methods.

In order to use the customary methods of chemical analysis the substance under examination evidently must be actually in the possession of the chemist. On the other hand, when spectrum analysis is employed it is sufficient that the light shall reach the experimenter. If it travels a few feet in the laboratory, very well; if it comes across the 93,000,000 miles which separate us from the sun, also very well; and if it comes from the enormously distant stars, still the method does not fail.

A little more than half a century ago a philosopher undertook to define the domains which it might be hoped human knowledge would sometime compass. He explained, among other things, how astronomers could measure the distances of the moon, planets, and sun. He showed how they could get the dimensions

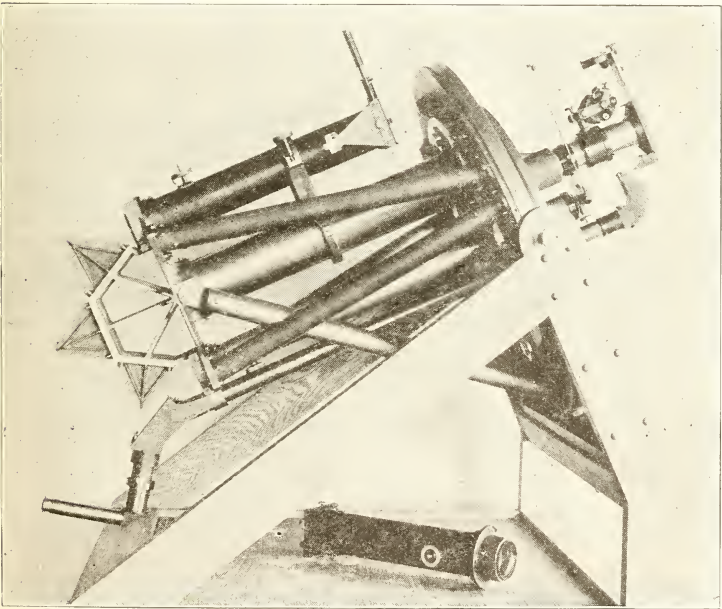
and masses of these bodies and could determine the laws of their motions. He remarked that powerful telescopes would show us much of their surface features. But he insisted that the chemical constitution of the bodies beyond this earth would forever remain unknown to us, because we should never be able to reach out across the appalling distances which separate us from them and get their substances for examination in our laboratories. What vain limits on our knowledge! While the philosopher wrote, Kirchhoff was laying down the principles of spectrum analysis, and before the ink of his publication was dry the chemical constitution of the sun was being determined. In the sun there are sodium, calcium, lead, iron, hydrogen, oxygen and more than half of the chemical elements of which the earth is composed. In fact, in both the sun and the stars, which in many cases are more than a million times as far away, we find the very elements of which we ourselves are composed. In spite of the fact that there are several hundred millions of stars within the reach of our telescopes, and that they occupy a region whose dimensions are vast beyond the wildest flights of our imagination, the spectroscope shows there is a unity in the constitution of the Universe as though it had been cast in one mould. This is one of the reasons why many astronomers think it is probable that there is life on millions of other worlds which doubtless revolve about the distant stars; for, by analogy, it is to be expected that many other suns have planets comparable to those which revolve around our own sun, though these planets are all so remote as to be completely invisible even through the largest telescope, and if other similar worlds exist it is only reasonable to suppose that part of them are in a condition favorable for the development and perpetuation of life. Of course, it must not be supposed that the highest forms of life are similar to human beings, for the differences necessitated by different environments might be very great. Nor must it be supposed that the highest forms of life on other worlds have reached the same intellectual, political, and social stage as human beings. In some cases they are probably in the state corresponding to that of our ancestors hundreds of thousands of years ago, and in others they are probably in the state corresponding to that at which our successors will have arrived hundreds of thousands of years in the future.

It must not be inferred that everything is known about the spectra of the sun and stars. In the solar spectrum there are 20,000 spectral lines, corresponding to different shades of colors, and only about half of them have been identified. Some of them may be due to unknown elements, and some of them may be lines of known elements which are produced only under the extreme conditions of temperature and electrical excitation which exist in the sun. In some cases lines in the sun's spectrum have led to the discovery on the earth of the elements which produce them. The most interesting and important example is that of the element helium. Its lines were always found in the solar spectrum and hence it was called helium, from the Greek *ἥλιος*, meaning the sun. For many years it was not known to exist on the earth. Finally its spectrum was found when certain rare minerals were heated until they were incandescent gases. This proved that helium was present in these minerals in small quantities, and then the chemists were able to isolate it. It was found to have most remarkable properties.

It is lighter than any other known substance except hydrogen, it is chemically inert, and it can be liquefied only with the utmost difficulty. Moreover, it is intimately wrapped up in the whole theory of radioactive substances, for it is always one of the products of degeneration when uranium and radium break up.

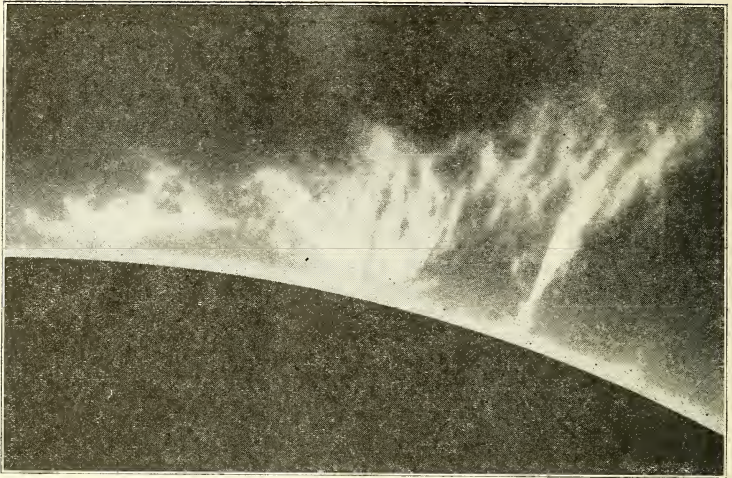
It may be interesting to note that helium was on the point of having very valuable applications in the late war. All balloons were filled with hydrogen, which is a violent explosive when mixed with air, and consequently they could easily be destroyed by firing incendiary bullets into them. Since helium is chemically inert, it would not have this disadvantage. The only problem was to get enough of this remarkable gas. The problem was supposed to be hopeless until it was found that it was given forth in considerable quantities from certain, but not all, gas wells. When the armistice was signed American scientists actually had isolated millions of cubic feet of helium.

The spectroscope has made it possible to observe at any time the violent eruptions which are almost continually taking place from the surface of the sun. Until it was used these eruptions could be observed only when the sun was totally eclipsed by the moon. Since total eclipses are very infrequent and of short dura-



The spectroscope used with the great Yerkes telescope, weight about 900 pounds. The direction of the light is changed 180 degrees by the three prisms which are visible at the lower left. This is, of course, a very powerful instrument.





Photograph of a small sector of the margin of the sun showing an eruption of highly heated gases which had ascended to a height of 80,000 miles. This photograph was taken with the great Yerkes telescope with a spectroscopic attachment.

tion, the opportunities were very poor for observing these remarkable phenomena, compared to which the most violent volcanic eruptions on the earth are insignificant. The reason that solar eruptions, or *prominences*, as they are called, can not be seen at any time is that the earth's atmosphere in the apparent vicinity of the sun is as bright as the prominences themselves and no contrast is presented. But when the light is passed through the spectroscope the sky illumination is spread out and correspondingly enfeebled because it is white light, while the intensity of the light of the eruptions is not diminished because it is of one color. That is, the background is made darker without any diminution of the brightness of the prominences.

The spectroscope has been put to quite a different use. It enables us to determine whether we are approaching or receding from a star. When we are approaching a star its light waves are crowded together a little, depending on our velocity relative to the star, and when we are receding the light waves are separated a little. That is, the color of the star is slightly changed. It is analogous to the pitch of a locomotive whistle or bell which is higher when the locomotive is approaching than when it is receding. The change in the color of a star can not be detected, but its spectral lines and groups of lines are slightly displaced, and from the amount of displacement from their normal positions the direction and rate of relative motion of the solar system can be determined. It has been found in this way that the sun and planets are going about 400,000,000 miles per year nearly in the direction of the bright star Vega,



which at this time of the year is low down in the northeast sky early in the evening. In spite of this great velocity of the earth, the stars are so enormously remote that our motion will produce no sensible changes in their appearance for hundreds or even thousands of years.

The tones given out by a musical instrument depend upon the structure of the instrument. From their character something of the structure of the instrument can be inferred. Similarly, the character of the light which a substance emits depends upon the structure of the radiating units. The spectroscope analyzes the radiations of an incandescent mass into their constituent parts. Every different kind of radiation, or color, corresponds to some sort of periodic vibration, or oscillation, in the radiating atoms. The structure of the atoms must be such that these oscillations are possible. If a substance gives out many kinds of light, as in the case of iron, its atoms must be very complex. Long before the discovery of radium and similar substances, in which atoms are actually found to break up into smaller units, spectrum analysis was pointing directly to the conclusion that the atoms are not ultimate structureless units of matter, as the chemists supposed, but that they are highly organized systems of smaller particles, comparable, perhaps, in their complexity to the sun and its numerous retinue of circulating planets, satellites, and comets. In the attack on the difficult and important question of the structure of the atoms no other weapon has been so valuable in the past as the spectroscope and none promises more for the future.

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# Moving Pictures in the Teaching Of Chemistry

PROBABLY every teacher of elementary chemistry will admit that this subject seems to offer a surprising degree of difficulty to the average student; or, from another point of view, that there is an enormous waste of time and energy somewhere in the process of assimilating and digesting what are, after all, very simple facts and arguments. In any case, the results are disappointing. During the last five years the average number of students passing the chemistry examination of the College Entrance Examination Board was only about 52 per cent of those taking this examination. This might be due to unreasonable requirements on the part of this examining body, or to too great severity on the part of the readers, but personal experience has convinced me that the fault is not with the Board. The questions asked are fully within the capacity of high school pupils, a large freedom of choice is allowed, and each bit of appropriate knowledge receives credit even when the answer as a whole is not satisfactory. Surely, if at the end of a year's study practically half of the students examined fail to gather together enough information to reach a pass-mark of 60 per cent, there is something wrong with our system of instruction. When we consider that for the most part only the better students in the schools attempt College entrance examinations our conviction of wrong grows. The trouble is not only in the schools, but in the colleges as well. The amount of chemistry which a College student learns in his first year of that subject appears small in proportion to the amount of time which he and his instructors spend upon it.

This is doubtless a matter of common experience in all departments of education, but it is perhaps peculiarly unfortunate in chemistry because of the great importance of this subject in connection with the industrial development of the country. Manufacturers have realized since the war, as never before, the enormous value of chemical investigation in supplementing and improving our natural resources and the need for hosts of trained chemists in connection with practically every industry, a need which we can safely prophesy will increase rather than decrease as time goes on and competition grows keener. The great chemists of the future must be drawn from the schools and colleges of today. Unsatisfactory methods of imparting the fundamentals mean unnecessary delay and waste of time at the best, and may result in the complete discouragement of many who might otherwise have developed into creditable chemists. It would, therefore, seem worth while to devote some time and attention to an effort to discover the cause of the present situation and to finding some method of improving it.

The cause I believe to be inherent in the nature of the subject, the novelty of the line of argument, the necessity of dealing with many things foreign to the experience of the student, and the difficulty of combining manual dexterity, accurate observation and abstract reasoning, as must be done in the laboratory. The panacea may be found, to my mind, in the extensive use of motion pictures

to supplement, and to some extent to be substituted for both lecture demonstration and laboratory work.

Before discussing the advantages offered by motion pictures we must be clear as to the general aims of elementary chemistry courses, both in school and college. As summarized by Professor Alexander Smith<sup>1</sup> of Columbia University, these aims are:

- a. To give training in observation, directing attention particularly to material objects and, therefore, differing from other studies and arousing a new set of activities.
- b. To give training in comparison and induction, working from the original material; in other words, the development of the scientific spirit.
- c. To exercise and control the imagination.
- d. To teach self-elimination, the diminishing as far as possible of the personal equation in intellectual work.
- e. To impart valuable information.

Beside these general aims, the teacher must keep in mind the fact that in all probability he has among his students several distinct groups; those who will wish to go on from this point to specialize in chemistry, either for teaching or technical work; those who will wish to use this chemistry as a foundation for other studies in professional schools; and those who are not likely to have more than one year of chemistry all told and whose only ideas of its applications must be got from this one year's work. Moreover, in addition to this, the secondary school teacher must endeavor to meet the specific requirements of the College Entrance Examination Board and other examining bodies from whom his students may wish to obtain a certificate. It is obvious, therefore, that his task is no sinecure.

The usual method of teaching the subject is to combine lectures or text-book reading (descriptive and didactive material), accompanied by frequent quizzes to test the pupil's memory of what he has read or heard, and by lecture-experiments illustrating the principles involved, with what is even more important in the eyes of most teachers and certainly more difficult to use efficiently, the laboratory work. Theoretically it is in the laboratory that the real mind-training, which is after all the most vital part of the work, is done. There the student learns to manipulate various unfamiliar tools, thus acquiring a dexterity that is unquestionably of value in other fields than chemistry; there, rather than in the lecture room, he learns to observe accurately; and there, as well as in the lecture room, he learns to correlate facts, to develop plausible hypotheses from these facts, and to test and sift his hypotheses until he has arrived at a logical and incontrovertible conclusion. That is, he is supposed to learn all these things, and the value of his course depends largely on the success with which these objects are attained. As a matter of fact, it is extremely doubtful whether the average laboratory course does much more than familiarize the student with such strange utensils as beakers and test tubes and with the habits and customs of a few acids and other unpleasant substances. There is no time, in the crowded curricula of

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1. Teaching of Chemistry in Secondary Schools.

school and college to develop the scientific attitude of mind, and at the same time cover the ground of even the simplest course as ordinarily given. The attempt is often made, says J. H. Long,<sup>1</sup> to cram more chemistry into the high school boy than many of our smaller Colleges find possible at 20. That attempt is natural on the part of an enthusiastic teacher with a store of information, all valuable in its way, which he is anxious to impart. The result is also natural; mental indigestion for the boy, irritation for his examiners, and disappointment for his teacher. The colleges have a little more time to spend, as well as more mature students, but even there the work must be hurried.

A noted English chemist<sup>2</sup> points out that there has been little change in the methods of teaching chemistry in the last sixty years. Is it reasonable to suppose that this is because the system was perfect at that time? Hardly! Moreover, it was devised for, and applied to more mature students than those with whom we now have to deal. We would scarcely be content with so little progress in industrial life; why should we rest content with stagnation in education?

Granted that the present system is not the best, what advantages do moving pictures offer in teaching chemistry? Many, it seems to me, both pedagogical and practical. First, they may be used to supplement the lectures so as to increase both their interest and their value. I believe they might very well take the place of many, if not all, of the lecture experiments now used for this purpose. A lecture-table experiment, to be of any use, must be carried out on a large scale so that the whole class may see clearly what is going on. With many experiments it is impossible to secure this. Even in the most modern lecture theatres, those sitting at the back of the room complain that they cannot see a large part of the demonstration, and the finer points are not infrequently missed by the whole class. The close-up with its exaggeration of detail, would be a boon to the back row. Further, an experiment takes its own time; it is neither to be hastened nor retarded to suit the convenience of the lecturer. The possibility of holding it at a definite point while the details are made clear or a discussion carried on, would add considerably to its educational value, as would also the possibility of repeating it as often as necessary at a moment's notice. Many lecture experiments which take only a moment to carry out before the class require much time and care in their previous preparation and subsequently can only be given once in the course of a lecture. Also, even with the greatest care beforehand, it not infrequently happens that some unavoidable accident happens and the experiment is a failure. The moving picture would eliminate the necessity of explaining to the class what should have happened and why it did not. It would also do away partly or altogether with the need of a special lecture assistant whose work it is to prepare these lecture demonstrations year after year, and in the case of the secondary schools where the master has to be his own assistant, it would effect an enormous saving of his time, which could easily be put to better advantage. A pictured experiment could be used not merely as well, but, on account of its greater clearness and exaggerated size, better than an actual lecture-table experiment for testing and training the student's powers of observation

1. Sci. 14 (1901), 360.

2. W. H. Perkin, *Nature*, 62 (1900), 476.

and reasoning. Moreover, I have no doubt that this could be done more effectively by a teacher whose mind is not occupied with the mechanical details of carrying out the experiment.

The College Entrance Examination Board in specifying the essentials to be taught in preparation for the examination in chemistry says, "It should be the aim of the teacher to emphasize, as opportunity offers, the essential importance of chemistry to modern civilization." This sounds simple and natural, but experience shows that the average beginner in chemistry has peculiar difficulty in correlating theory and practice. He puts the two things into separate compartments in his mind and loses the key of the communicating door. The presentation and discussion of properly worked out films of industrial processes should be a great help in this direction, especially as they might so easily be accompanied by films of the corresponding laboratory processes for comparison. The suggestion that moving pictures should be used to bring industrial processes home to the student and thus stimulate interest, as well as improve his understanding of such processes, was made at the Buffalo meeting of the American Chemical Society and received with the greatest enthusiasm by the chemists present.

No course in chemistry which does not include laboratory work can be at all adequate, inasmuch as the student can acquire only in the laboratory the dexterity and ingenuity which are essential before proceeding to the higher branches of the science. Otherwise, so far as the pedagogy is concerned, the elementary laboratory accomplishes little which the moving picture could not do as well or better. The student sees things done and the results follow in the picture, makes his own observation, draws his own conclusion, learns to sift the essential from the superficial, to eliminate prejudice and preconceived ideas, and to reason logically from the facts presented to him. It would seem as easy to do all this from a pictured experiment as from one which he performs for himself. Moreover, it seems to be a fact that a moving picture tends to remain fixed in the memory even longer than a piece of work which one has carried out with one's own hands. This may be because the mind is not deflected from the main object by attention to mechanical difficulties or by bodily fatigue. The freedom of mind from all minor matters is also an advantage to the teacher, who can thus give his undivided attention to the mental processes of his class. To plunge a beginning student into a laboratory where practically nothing he handles is familiar to him and expect him to reason about the processes he goes through is not unlike asking a person in the early stages of finger exercises and scales to play and interpret a Bach fugue. The mechanical difficulties absorb his whole attention and in the effort to get through note perfect he has no time to think of expression. We put our beginners in the laboratory too soon, with the result that they waste a large proportion of their time there doing painfully and uncertainly what might a little later be done pleasantly and easily. There are those who profess to find a pedagogical value in this very difficulty, but while effort is undoubtedly stimulating, too great a tax is deadening. Since we believe the mental training to be the most valuable thing which the student gets, why not concentrate on this at the beginning and let the correlation between experimentation and mental process



come a little later. Pictures of laboratory processes may be shown and studied carefully from the same point of view as a laboratory experiment, until the student has become accustomed to that kind of seeing and thinking. They may then be sent into the laboratory to try to repeat for themselves some of the processes which they have seen carried on in the picture. In the attempt to imitate exactly what has been done they will learn the necessity for accurate observation and attention to detail, and will also naturally tend to take more interest in the mechanical processes. Further, since the theoretical discussion has already directed their thoughts along the proper line, the instructor may now be more critical than would otherwise be reasonable. Unquestionably this would be an improvement over the blind following of printed directions, which is all that can be accomplished in many laboratories where time and teaching force are limited and classes unlimited. Later on the pupil may be trusted to use and not misuse printed directions, since by this time his point of view will have matured.

While the motion picture can never entirely displace laboratory teaching, it may take the place of part of it. One instructor could handle larger sections in the laboratory after the preliminary training. Time, apparatus and materials would be saved, no inconsiderable matter. There is a growing feeling that the ratio of expenditure to profit in elementary laboratory courses is too large, and any way in which this ratio might be altered for the better would be welcome. Columbia and New York Universities have tried to adjust by careful standardization and application of the efficiency methods of a modern factory to the laboratory work. Professor Blanchard of the Massachusetts Institute of Technology in criticizing this method raises the objection that there is grave danger of all mental stimulus being sacrificed to the routine. He says in part:

It is more often the case than not that after a student has performed a routine experiment in the routine manner he will retain of it so vague a recollection that he is unable to relate his observations next day in the class room. The value of laboratory work depends mostly on the extent to which the students feel the research spirit—even if in but a very feeble way in elementary laboratories. Acquiring manipulative skill and learning properties which are better stated in the text books than they can be by the student, are for the most part incidental to the more important purposes. There must be a compromise in elementary laboratories handling large classes between efficiency of the supply service on the one hand and the scientific inspiration of the individual student on the other. If it becomes necessary on account of the expense so to standardize the laboratory work that it loses nearly all its stimulus, were it not better to omit laboratory from the program entirely, at least until the point is reached where sustained experiments apply, (i. e., the working out of a simple problem, as in the unknown of qualitative analysis). Some students are at school or college for a general liberal education—not to specialize in science. How shall they be treated if they elect to study the elements of chemistry? Is the expense of even a standardized and denatured laboratory course justified? When chemistry is chosen mainly for the object of intellectual development, does not the class room work without the laboratory serve the purpose?<sup>1</sup>

1. Science, 56, 112.

If I am not mistaken, the administrative problem might be at least partly solved without compromising the scientific inspiration.

With regard to the practical details of such a scheme much needs to be worked out by chemist and moving picture expert in collaboration. The success with which the ordinary standard experiments could be reproduced can only be learned by actual tests. There might be difficulty in arranging a laboratory to serve as a moving picture studio; there would certainly be difficulty in arranging a studio to serve as a laboratory. It would be advantageous to be able to reproduce experiments in colour, and it would, of course, be necessary to plan a standard series of experiments which could be used in a great many different institutions. For schools such a series might be based on the requirements of the College Entrance Examination Board. There is perhaps a little more variation in the courses given at the different colleges, but even so there are a large number of experiments common to all elementary courses.

The idea of using motion pictures for educational purposes is not new, and the idea of applying them for scientific work seems to be in the air, but none of these ideas so far have been sufficiently far-reaching. A series such as I have in mind, if technically feasible, would cover the whole field of elementary chemistry, with possibly some extensions to later courses, as well, and would apply to every institution where chemistry is taught.

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## Some of the Pitfalls

VISUAL EDUCATION is not a new idea. That the child of today is being educated by the motion picture is patent enough to the most casual observer. Whence these garlanded curls, these coquettish glances, these airs and graces the little girl affects? Whence the clownish walk, the knockabout antics, the slap-stick merrymaking of her small brother? A dime plus wartax will speedily introduce you to the source of these and various other juvenile developments.

Evidently the problem of Visual Education is not to build, but to rebuild. Education by the motion picture began with the motion picture itself. It is going on daily in every collection of people large enough to call itself a village. It is not to create, but to direct education by this means, that the Society for Visual Education exists.

Putting the motion picture into the schools is not a matter of introducing a machine and showing a picture to the assembled pupils, although the industry started about as simply as that. Someone turned a crank and someone else collected the nickels. (It *was* a nickel in those days of ten or fifteen years ago.) To the blithe hearts who made those early beginnings, the present endeavor would be merely the matter of turning another crank and letting the school board supply the nickels.

The motion picture, however, has grown with the growing century. It is the young giant of the industries. It is the infant phenomenon of the sciences. It is, alas, the *enfant terrible* of the arts. A development that has revolutionized the theatrical world, disjointed the magazine business and thrust it into new forms, created a tremendous new publicity and propaganda medium, is not going to come quietly into the schools and sit down like a timid visitor. We can be sure it will bring about amazing changes there as it has elsewhere. We should be just as sure that we must demand changes in the motion picture business when introducing it.

Two big problems loom up—to prepare the motion picture for the schools, and to adjust the schools to the motion picture. The first of these is primarily the work of the educator, the trained psychologist, the expert teacher. It is a problem of working out with the utmost patience, the completest science, the readiest adaptability, an endless series of minutiae as well as a broad plan of procedure. The so-called “educational films” one may see are but a hint at the sort of thing that is needed. They are no nearer to really educational material than the mere movement pictures of twenty years ago are to the involved and elaborate productions of the present day. The school film of the future will be the result of study and experiment and vision. It will be the product of experts. Secondly, the adjustment of the school to the film is a work even more difficult in its way because in it the personal element is so largely developed. Three factors enter into our schools: The teaching force directs and carries out plans. The public is the cause of it all, furnishing support in both a material and a moral sense. Without the co-operation of the pupil the efforts of either of the other

forces is after all of little avail. These three sets of influences make our schools what they are.

With these three—teacher, public and pupil—there must be a distinct campaign designed to “sell” the new idea, as the slang of the advertiser puts it. The teacher must be convinced of the desirability of the method. The parent, the business man, the onlooker, must see good results; and the child must at least be a no more reluctant field for educational endeavor than at present; conceivably, he should become a much more active and interested partner in the work of cultivation.

Growing up with the century and with the motion picture, perhaps part of some great world force to which we are yet too close for exact definition has been the practice of the “joy” idea in education. The “lickin’ and larnin’” of the Hoosier Schoolmaster passed out a half century ago. “Reading without tears” has been the motto of the schools, and the effort to find a “royal road” has been crowned with a fair measure of success; that is, the road has often been attained, but it has not invariably led to learning. The path has been made as pleasing and as full of “interest” for the young traveler as the nature of the case would permit. All has gone well enough until he emerges upon a broader path. Then come the sad lessons that should have been learned earlier; that penmanship should be legible, that spelling underlies the use of the written word, that the multiplication table is quite inelastic. By sparing the child this experience in the schools we not infrequently send him forth to learn it in the school of hard knocks.

One of the pitfalls into which the use of the motion picture in schools may fall is that it may become an adjunct to this theory of joy, and nothing more. It may—and should—be the cause of a great deal of enjoyment. It may—and should—create a higher and deeper interest than ever children have felt in their school work, but if it does only this, it will have missed entirely its real usefulness. The failure to translate the joy into activity, the interest into accomplishment, is the humiliation of the present, as it is the problem of the immediate future. Pleasure in education is highly desirable. Discipline by education is absolutely essential. Not to be a substitute for study, but to become a stimulus to study is the true function of the picture.

It is obvious that more than the turning of a crank will be needed to bring about this result. More than a well-worked out picture will be needed, too. Inevitably a new technique in education will in time be demanded. One has a glimpse of the ideal teacher; with the vision to supplement and direct and vitalize the work of the screen; with the fine adaptability that turns to account every current of action and reaction going on before her; with high purpose that makes of this new education a forceful individual development impossible with the older methods.

Given this new teacher, the new technique well worked out, then the conversion of the public to the plan should not be difficult. To the average individual who takes perhaps but a superficial view of the whole matter of schools and their work, this movement is doomed to appear, at first, merely another scheme to

make education easier for all concerned, and so less efficient. If this surface judgment is to be replaced by a more favorable opinion, it must be through the actual results made manifest. The thorough grounding of a group of boys and girls in the fundamentals of the common schools would be one of the best of arguments. Far, far better would be the development of the group so that, emerging from the school, they would both desire to build upon that foundation, and know how to apply themselves to the work of building. Knowledge is a little, the desire for knowledge much, the ability to acquire it most of all. To such high goal as this the new education must tend, if it is to meet the objections of the "practical" man, the parent who demands results.

And what of the pupil, for by the result upon him the whole fabric stands or falls? He is not merely the passive object upon which educational theories may be tried. He is not plastic as clay; he is not unyielding as marble. He is something far more difficult to handle than either—an individual, a personality. His response to visual education will prove or disprove its value. His participation will determine its effectiveness or its failure.

For the child of the present already knows the motion picture only too well. He is fed daily on serial thriller, on erotic romance, on the rough and tumble scenes of violence and vulgarity denominated comedy. Some of his reactions to this mass of crude sensations will be helpful; more will be decidedly otherwise. Insofar as he has learned to observe and enjoy, he will be helped to observe and enjoy still further; but there has been created a craving for excitement that is a stumbling-block indeed.

When an "educational picture" is shown at a commercial picture house the change in the temper of the audience is immediate. It is the signal for leaving, or for the bustle and inattention that mark the restless endurance until the next "photoplay" begins. In a juvenile gathering the effect is even more marked. Educational movies are "slow," just as school is "slow"; young America demands gun-play. Some concession will undoubtedly have to be made to this craving for violent action; and how to make the concession without yielding the detail and the patience necessary to the imparting of real information is a serious problem.

Even more serious, though apparently but a small consideration, is the fact that the movie has created in the child a distrust of itself. The wonder and credulity that are supposed to be essentially childlike characteristics are fast-disappearing phenomena. The boy or girl who has seen a man run over by an automobile, thrown off a cliff into the sea, caught in the jaws of huge machinery, only to spring up unharmed and vigorous, is not credulous enough to think that the picture records fact. He learns quickly enough that these are but illusions fabricated for his sight. He will be apt to reach the same conclusion whenever anything is presented that seems marvelous, or without an adequate explanation from his daily experience. Show in a schoolroom a chemical reaction, and the undertone will be "Aw, it's only a fake!"

Suppose the teacher is presenting the story of the Revolutionary soldiers at Valley Forge. The scene has been worked out with fidelity to fact and reality,



but the child knows that Washington lived a century and a half ago, while the picture was made yesterday. He probably feels as sure that the picture was taken in Hollywood instead of at Valley Forge. With this inevitable unbelief at the root of his lesson, it will be difficult to inspire faith in the accuracy of the whole.

Complete sincerity must lie at the basis of the educational motion picture; and its basic problem will be to convince the child of that fact. To compel attention and belief, to be stimulating without being sensational, to impart knowledge and arouse the thirst for knowledge—here is no petty task.

This has been no more than a brief summary of a few of the obstacles that must be overcome if education by means of the motion picture is to be really successful, if it is to be anything more than just another way of getting through the dull hours custom decrees teacher and pupil should spend together. One hopes the school of the future, the teacher of the future, the pupil of the future, may all have a higher ideal than this; and that the motion picture, surmounting these and other hazards, may be a powerful factor in bringing about this condition.

FLORA WARREN SEYMOUR.

*Attorney-at-Law,*

*Corresponding Secretary of the  
National Federation of College Women.*

## Announcement by the N. E. A. Press Service

### PROGRAM

Annual Meeting of the NATIONAL EDUCATION ASSOCIATION, Salt Lake City, Utah.

(All sessions will be held in the Tabernacle)

Monday Evening, July 5, 1920, 7:30 o'clock

E. A. Smith, Superintendent of Schools, Salt Lake City, Utah, introduces George D. Strayer, Professor Educational Administration, Teachers College, Columbia University, New York, N. Y.

#### ADDRESSES OF WELCOME

G. N. Childs, State Superintendent of Public Instruction, Salt Lake City, Utah.  
Simon Bramberger, Governor of State of Utah, Salt Lake City, Utah.

#### RESPONSE

A. E. Winship, Editor "Journal of Education," Boston, Mass.

#### TROMBONE SOLO

Alfred Roncovieri, Superintendent of Schools, San Francisco, Calif.

#### PRESIDENT'S ADDRESS

Josephine Corliss Preston, State Superintendent of Public Instruction, Olympia, Wash.

#### REPORT OF THE COUNCIL OF EDUCATION

Homer H. Seerley, President Iowa State Teachers College, Cedar Falls, Iowa.

Tuesday Afternoon, July 6, 1920, 2:00 o'clock

#### THE NATIONAL EDUCATION ASSOCIATION AS THE INTERPRETATION OF AMERICAN CIVILIZATION

Mary C. C. Bradford, State Superintendent of Public Instruction, Denver, Colo.

#### REPORT OF THE COMMISSION ON THE EMERGENCY IN EDUCATION

George D. Strayer, Professor Educational Administration, Teachers College, Columbia University, New York, N. Y.

#### THE RECOGNITION OF EDUCATION AS RELATED TO OUR NATIONAL LIFE

Olive Jones, Principal Public School No. 120, New York, N. Y.

Will C. Wood, State Superintendent Public Instruction, Sacramento, Calif.

Tuesday Evening, July 6, 1920, 7:30 o'clock

### CIVIC EDUCATION

#### THE PROBLEMS OF AMERICANIZATION

Jessie Burrall, Chief of School Service, National Geographic Society, Washington, D. C.

#### HOW WE ARE TEACHING CITIZENSHIP IN OUR SCHOOLS (8 minutes)

William J. Guitteau, Superintendent of Schools, Toledo, Ohio.

F. B. Cooper, Superintendent of Schools, Seattle, Wash.

Frank Webster, Assistant Superintendent of Schools, Minneapolis, Minn.

L. P. Benezet, Superintendent of Schools, Evansville, Ind.

Susan Dorsey, Superintendent of Schools, Los Angeles, Calif.

#### WHAT THE WAR CONTRIBUTED TOWARDS TEACHING CITIZENSHIP

Guy Potter Benton, Vice President Sargent Service Corporation, New York, N. Y.

**Wednesday Afternoon, July 7, 1920, 2:00 o'clock**

**INDUSTRIAL EDUCATION**

**THE OPPORTUNITY SCHOOL**

**ARE WE GETTING PROPER RETURNS FROM INDUSTRIAL EDUCATION IN OUR PUBLIC SCHOOLS**

H. S. Weet, Superintendent of Schools, Rochester, N. Y.

C. A. Prosser, Principal Dunwoody School, Minneapolis, Minn.

E. A. Bryan, Commissioner of Education, Boise, Idaho.

**TRANSITION OF THE PUPIL FROM THE SCHOOL TO INDUSTRY**

Arthur Holder, Federal Board of Education, Washington, D. C.

**Wednesday Evening, July 7, 1920, 7:30 o'clock**

**HEALTH EDUCATION**

**HEALTH EDUCATION (5 minutes)**

Thomas D. Wood, Professor of Physical Education, Teachers College, Columbia University, New York, N. Y., Chairman.

Sallie Lucas Jean, Director Child Health Organization, New York, N. Y.

E. G. Gowans, State Health Inspector, Salt Lake City, Utah.

A. A. Slade, Commissioner of Education, Cheyenne, Wyo.

Margaret S. McNaught, Commissioner of Elementary Education, Sacramento, Calif.

Katherine D. Blake, Principal Public School No. 6, Borough of Manhattan, N. Y.

**CHARACTER EDUCATION**

E. H. Lindley, President University of Idaho, Boise, Idaho.

**ILLITERACY**

Cora Wilson Stewart, Chairman Kentucky Illiteracy Commission, Frankfort, Ky.

**THRIFT EDUCATION**

Arthur Chamberlain, Secretary California Council of Education, San Francisco, Calif.

**Thursday Forenoon, July 8, 1920, 9:00 o'clock**

**NATIONAL CONGRESS OF SCHOOL BOARDS, CLASSROOM TEACHERS AND SUPERINTENDENTS**

**THE SCHOOL BOARD'S PLACE IN THE EDUCATIONAL SYSTEM (4 minutes)**

Albert Wunderlich, Commissioner of Education, St. Paul, Minn.

Frank Gilbert, Deputy Commissioner of Education, Albany, N. Y.

C. C. Hansen, Member of School Board, Memphis, Tenn.

E. C. Day, Member of School Board, Helena, Mont.

Frank Thompson, Member of School Board, Cleveland, Ohio.

O. O. Hoga, Member of School Board, Boise, Idaho.

Mrs. V. H. Miller, Chairman School Board Section Inland Empire Teachers Association, Tacoma, Wash.

Nova Snell, Member of School Board, Lincoln, Nebr.

Mrs. J. H. Barnes, Member of School Board, Duluth, Minn.

J. C. Freece, Member of School Board, Davenport, Wash.

R. W. Corwin, Member of School Board, Pueblo, Colo.

John M. Withrow, Member of School Board, Cincinnati, Ohio.

**THE SURVIVAL OF PROFESSIONAL SPIRIT DESPITE ECONOMIC PRESSURE AND SOCIAL UNREST**

John H. Finley, Commissioner of Education, Albany, N. Y.

*(Continued on page 49)*

# Habitat Groups in the Teaching of Geography

AS a sequel to my article in Number 1 of this magazine\* the following photographs were received. They illustrate very happily the work of children in preparing habitat groups. This work was done in connection with the study of geography at the Normal School at Lowell, Mass. It is along just the lines that I proposed and it is work which I most heartily commend.

The children prepared these little exhibits in a co-operative way. Some of the older pupils in the seventh and eighth grades volunteered to make certain of the models and turn them over to the children of the lower grades who were actually at work in preparing the habitat groups. In a few instances older pupils added large drawings which served as backgrounds.

The work has not the finish that the trained museum curator should strive for. It is the work of the children, and the chief educational value came to those who were actually engaged in preparing the group. Each group required the visualization of a distinct scene. It called for home work. It disturbed many parents, and it required special reading in the library. Numerous discussions in the classroom were based upon this work, and other discussions followed in the hours after school when the children worked, of their own accord, in perfecting the details of the several groups.



FIG. 1. The life among the people of the far north has a very strong appeal for children, and it is a pleasure to them to assist in making the snow houses, built by the Eskimos in travelling, and to make the tiny sledges and the dogs. The boys who made the dogs evidently wanted animals that were in first-class, healthy condition. The beautiful curl on the dogs' tails is indicative of perfect health.

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\*Visual Education, Vol. 1, No. 1, First Steps in the Study of Geography.



FIG. 2. A lumbering camp in the woods of northern Maine. The foreground is built on a table and the background is a drawing attached to the blackboard. The log cabins are made of small twigs and the little figures are tiny dolls. The snow is chiefly cotton, with a scattering of mica flakes to give the sparkling effect. The trees are made from small green twigs.

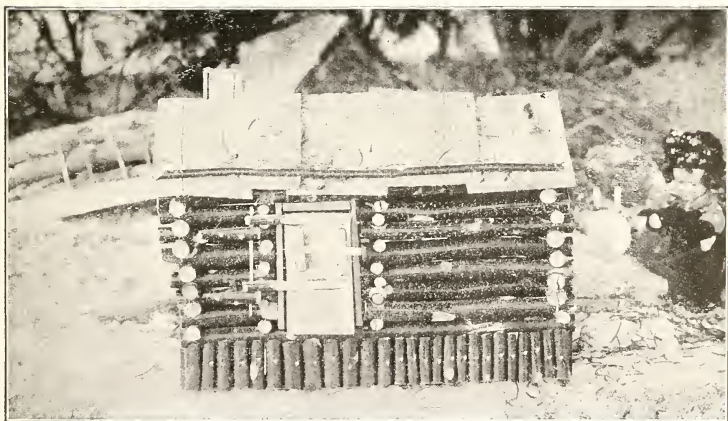


FIG. 3. This is the most elaborate of the log cabins made for the miniature workmen in the Maine woods. A boy with twigs and a good jack knife took a real delight in making this home, and there can be no doubt that he imagined himself there living the life of a woodchopper during a few months of the winter.





FIG. 4. It would be an unusual group of children that did not wish to make a habitat group of Japan at the time they were studying the geography of that country. The strangeness of the homes, the beauty of the cherry blossoms and of the costumes all appeal to the young pupils, and they enjoy giving expression to the ideas which they are gaining. There is a dramatic element in this work which appeals to the child.

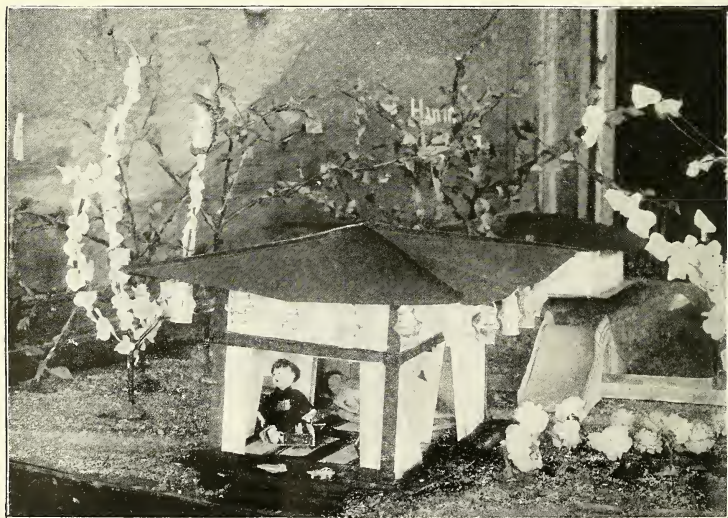


FIG. 5. In the interior of the little Japanese homes the children have placed the simple mattings and simpler beds. The custom of removing the shoes, before entering the house, is prettily illustrated, and the lanterns and the cherry blossoms add a very effective bunch of color to the scene.



FIG. 6. The customs of these people and their modes of travel seem to appeal to children very strongly. The hats appear to have received special attention.



FIG. 7. The American Indians serve as a most interesting study, and this group is valuable not only in connection with the geography and history work, but in a series of reading lessons, for no child should go through his school days without becoming familiar with the wonderful story of Hiawatha.

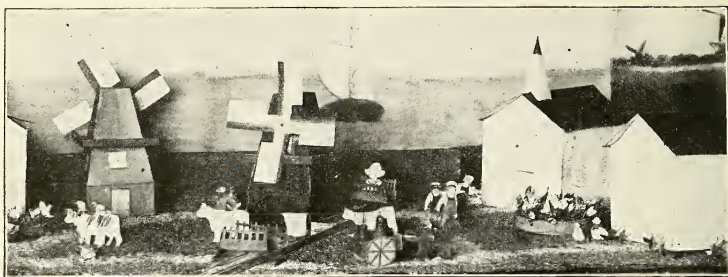


FIG. 8. Holland with its canals and great windmills always fascinates the children in their geography lessons. The simple homes with their ever-present flower gardens, the great towers about the windmills, the bridges across the canals, and the grazing of cattle make up the chief elements in the scene. Tiny dolls and a few specimens from a Noah's Ark have been contributed.

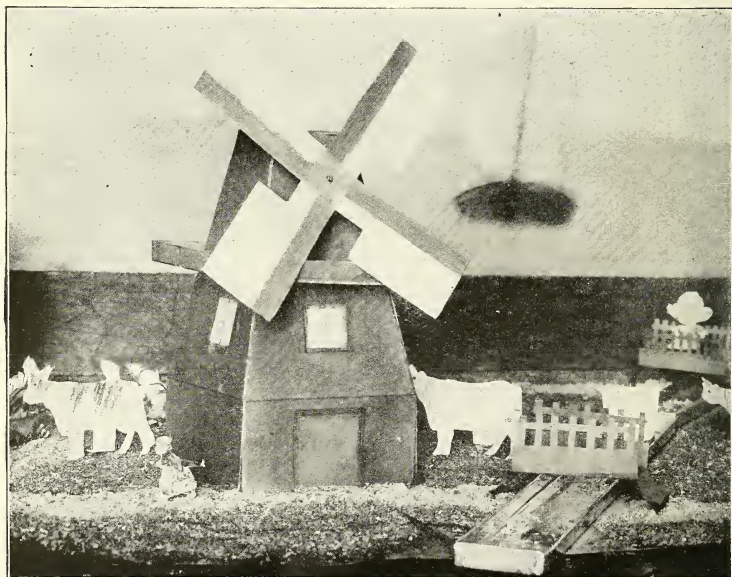


FIG. 9. A more detailed view of a portion of the Dutch scene. The simplicity of this scene is one of its chief assets. It must be viewed as the work of the children.





FIG. 10. A desert scene is in marked contrast to the others thus far shown, but it is a most interesting life to study. The sphinx and the pyramids are shown here. A Bedouin home appears in the foreground, and a more permanent structure is at the right near the date palms. It is evident that visitors have come to this oasis.



FIG. 11. A closer study shows that tiny dolls have been brought from home, and a horse and a camel have probably come from Noah's Ark.

The study of this series of pictures cannot but inspire the educator with the significance of this type of work. There was the training of the imagination, the advantages that came from the mechanical work associated with carrying out the enterprise, the promotion of co-operation in the group of children, the visualization of the study of geography.

Furthermore, when the groups were completed they were viewed several times by the other children in the school. They aroused an unusual interest because they were the work of other children. The finished product of an adult would not have served as effectively in promoting a real interest in the homes which are depicted here. The little children overlook many imperfections, such as errors in scale, which we may detect. Their imaginations work in sympathy with the imaginations of those who prepared the habitat groups. They are all children, they are familiar with the ways of children, and they are delighted with the work of their fellow pupils.

The habitat groups teach through the eye and through the hand.

WALLACE W. ATWOOD.

*Professor of Geography,  
Harvard University.*



# Visual Education Problems Common to Most Small Schools

THE announcement of the formation of the Society for Visual Education through the first number of VISUAL EDUCATION, created unusual interest on the part of school administrators. Many of these, particularly in the larger cities, had made the best of what was available in the form of slides and so-called educational films, and realized both the shortcomings and the possibilities awaiting proper development of the field.

The April bulletin and journal have pointed the way for the most hopeful educational policy since the establishment of the public school system. The personnel of the society insures the soundness of the project to the satisfaction of the school administrators; the announcement of the results accomplished in so short a time shows the remarkable executive capacity of its leaders, and presages the general introduction of visual education where none was hitherto possible. It is with the introduction of these opportunities in the smaller cities and towns that this article is chiefly concerned.

There are still about as many pupils in the smaller cities and villages as in the larger centers. In many of these, conditions similar to the following still obtain:

1. Weak school spirit.
2. Parent-teacher association dead, or at best not reaching those whom it ought to reach most.
3. No school auditorium.
4. Chautauquas and lyceums financial failures and difficult to maintain.
5. Wholesome employment of leisure lacking for both youth and adults—
  - (a) Commercial movies trashy and unsanitary.
  - (b) High class spoken drama and opera equally beyond general reach.
6. School finances inadequate to even a fair compensation to teachers, causing generally a loss of enthusiasm and exercise of initiative as well as a desire to abide only temporarily in such towns.
7. No motion picture projector and lack of desirable slides.
8. Community co-operation poorly developed.

Most of these conditions existed last September in the writer's community—a clean enterprising town of 2,500 in a rich mining and farming country, only twenty-six miles from a metropolis. Similar conditions will still face many superintendents and high school principals next September. It is primarily with the intention of offering assistance to these in overcoming their particular difficulties that the details of the writer's experience are given.

In September, the guarantors of the local lyceum course, who were also the guarantors of the chautauquas which failed despite the efforts of the hustling commercial club of which all are members, decided to place the selling of season tickets in the hands of the superintendent and the high school, the excess over expenses to go to the school. In the presentation of the project to the pupils, the writer set the goal at the cost of a good projector. This was reached and passed

by over \$50. In order to obtain this for use during the winter and before the lyceum course closed, the superintendent advanced the money for this and a high class release of general interest—"Evangeline." The two upper grade and high school pupils were shown this during the afternoon, and the parents and the guarantors were invited for the evening. (The general public could not be invited, owing to the small capacity of the H. S. Assembly—180.) Phonograph records particularly adapted and skillfully handled helped to make the venture an astonishing success. After the program the ladies were invited to refreshments in the domestic science room while the writer explained his project to the men. In eight minutes an informal H. S. club was organized and a presiding officer and a hustling secretary-treasurer elected. This club is composed of practically all the progressive men of the community, ranging from millionaires to artisans and miners and from university graduates to men of meager education. After each program every member pays his dues in advance so that there is always enough money to pay for the next two. Everybody comes unless sick or out of town, and brings the adult members of his family. Everybody is eligible to club membership. The dues are only 50 cents for each program. This is preferable to the admission fee plan for each of these men feels that he is doing something to make the best in film possible for the boys and girls.

After all it is the men who must become imbued with school spirit to accomplish the utmost. The instrument for this end must be of general interest and attractive enough to sustain that interest, and lead to greater ends. In the writer's opinion, nothing can equal the high class screen portrayals of the best of the world's literature suitable to visualization, for this dual purpose. If such, properly produced, cannot secure and hold the interest of youth and adult public, the power and influence of literature has been grossly exaggerated and curriculum reconstruction is imperative. If the artistic portrayal of the highest ideals of the human race fail in inspiration of intellectual uplift and social betterment, what will produce these? How well will this lend itself to the Americanization and universal brotherhood efforts? Not that the screen shall displace the intensive study of the classics, but that it shall supplement and intensify these ideals. Taken in this order there need be no fear of stultifying the imagination nor of dull English classes. Nor shall the literary program displace the specialized and technical matter vitally needed despite skilled instructors. Rather it shall pave the way for its general introduction through the awakening of the general public to the economy of visual instruction expertly planned.

In closing, let no one delude himself that funds for the proper development of this work are trifling and readily obtainable generally without this school interest. Unfortunately, screen portrayals of literary masterpieces are often exceedingly expensive to produce and difficult to obtain. In a search practically nation wide, the writer found but five of the desired type. His pupils and patrons clamor for more. The interest of the latter will decline as the school house becomes more rarely the center of social gathering for them.

CHARLES B. KLINGELHOEFER,  
*Superintendent Public Schools,  
Mascoutah, Ill.*

## Miscellaneous Notes

THE Shakespeare Festival of Teachers College, New York City, held at the College, Feb. 18th and 19th, was one of the most elaborate productions of the kind ever presented.

The scene of the Festival was the countryside about Stratford, and the time, the year of Shakespeare's withdrawal from the stage of London. The Festival itself consisted of eight episodes beginning with a Fairy Prolog and ending with the midnight drinking scene from Twelfth Night.

The work of staging, designing of the costumes, and decorating, was accomplished by students in various departments in the College at an unbelievably low cost. Each episode was given into the charge of a teacher or student who organized and rehearsed the group, in some cases writing the scene.

The March number of Teachers College Record devotes a large amount of space to a detailed account of the methods used in producing the Festival, together with a reprint of the entire libretto.

★ ★ ★

AN interesting pamphlet has recently been published by the Department of the Interior, Bureau of Education, Washington, D. C. It is called "Extension Leaflet No. 1," is dated December, 1919, and bears the title "Educational Institutions Equipped with Moving Picture Projection Machines." This pamphlet tabulates the replies received to over 38,000 questionnaires sent out by the visual instruction section of the division of educational extension to locate the moving picture projection machines in use for purely educational purposes in the U. S. Out of 16,351 educational institutions which reported, 1,129 were equipped with projectors at the time; a complete list of these institutions along with the address, make of machine, and capacity of auditorium, is given in the pamphlet mentioned. A goodly number of the other institutions were planning immediate installations and doubtless many more schools and colleges have joined the ranks of the pro-

gressives since January 1, 1920. An explanatory note states that this summary is "presumably incomplete only, and not inaccurate. It should, and doubtless will, be followed by later lists, supplying the deficiencies of this list and keeping the information up to date."

★ ★ ★

*Old English May Fete, Washington University, St. Louis, Mo.*

THE Women's Athletic Association of Washington University, St. Louis, announced their celebration of May Day ceremonies on May 5th, as follows:

"We are planning an old English May Fete, calling it The Bonnybrook Fair. It will take place in the 'Quad' with the buildings forming the background and with festive booths on the side, including a thatched Ann Hathaway cottage, the Tavern, and an outdoor stage in the center; the whole arrangement duplicates as nearly as possible the old English settings for May Fetes. We have been following John Bennetts' 'Master Skylark' and will run the story, dramatized, through the whole performance."

★ ★ ★

THE National Geographic Society has made arrangements to issue its splendid collection of pictures on separate sheets, in a size suitable for school-room use, and in series edited to fit various courses of study. Many school boards have ordered these sets extensively for every building, feeling that they are a valuable aid to visual education. The newest sets just off the press include a series on Eskimo and Sahara Life, the United States, and Land, Water and Air. Requests for information should be addressed to J. C. Burrall, Chief of School Service, National Geographic Society, Washington, D. C.

★ ★ ★

ON May 3rd, in Winnipeg, Manitoba, was held a magnificent historical pageant, commemorating the two hundred and fiftieth anniversary of the Hudson's Bay Company, the company which once controlled three-fourths of the North American continent and made the history of western Canada.

The occasion was observed by a fur brigade of Indians, trappers, and voyageurs on Red river, and a pow-wow and peace pipe ceremonies between the Indians and the governor of the company, Sir Robert Kindersley, who came from London for the event. From Labrador, from the Pacific coast, from the shores of the Arctic ocean, came old time servants of the company together with Indians from a dozen scattered tribes to renew the ancient friendship between the tribesmen and the company. After an oration delivered with dignity and skill by Kinewakan, chief of the Wahpeton Sioux, the peace pipe was smoked at old Fort Garry, which once faced the wilderness alone, the last post on the trail, and which saw the first treaty of peace signed in 1871 between Canada and the western Indians.

Thousands of people watched the impressive rites that marked the day. The anniversary will be celebrated later by successive street pageants in Edmonton, Calgary, Vancouver and Victoria, all of which towns grew up about old Hudson's Bay Company posts.

★ ★ ★

IN Scribner's Magazine for May are five delightful etchings of Old Plymouth which will charm all lovers of the quaint old town. They are the work of Sears Gallagher done in honor of the Tercentenary of the Landing of the Pilgrims, and appear with peculiar appropriateness at this time, when so much is being done throughout the country to celebrate the memorable event.

★ ★ ★

IT is reported that the Conservation Committee of the State of New York is to make a series of films showing the beauties of New York State. These productions will be distributed by the Educational Film Corporation, 729 7th Ave., New York City.

★ ★ ★

THE following is reported from Albany, New York, on May 1st: "The local exchange of Universal yesterday gave a private screening of a picture which will be featured in connection with the National Ship-by-Truck and Good Roads week. Present at the showing were Secretary of State Hugo and a number of other state officials.

The film will have its first New York showing at the Capitol theater on Saturday morning, May 15, at a meeting at which Secretary of State Hugo will act as chairman and at which Vice-President Thomas R. Marshall and Governor Alfred E. Smith are also expected to speak."

★ ★ ★

"THE early struggle in Kansas to determine whether or not the State would be free will be depicted in an historical pageant to be staged at the University of Kansas at the annual May fete to be given May 15. The pageant is being written by Prof. C. F. Skilton of the university."  
—C. S. Monitor, April 29, 1920.

★ ★ ★

THE Western College for Women, Oxford, Ohio, is planning to present a flower pageant on Tree Day, May 19. A hillside on the campus will be used as the setting and the cast will include one hundred of the college girls. Included among the day's events is the spectacular staging of "Joan of Arc" by the senior class.

★ ★ ★

THE tercentenary of the landing of the Pilgrims in America from the Mayflower will be commemorated by the British Societies of San Francisco with a pageant requiring a cast of 650 people, on Empire Day, May 24, in which they will be assisted by the Bay cities and the New England Association. Characters will be correctly costumed and genuine relics will be a feature of the historical tableaux.

The origin of the earliest New England colonies will be shown by symbolic groupings, and British and American veterans of the world war will join in presenting "Reunited."

A Carnegie Ross, British Consul-General, is chairman of the committee of arrangements. The author and director of the pageant is Charles B. Sedgwick. The proceeds will go to local British charities.—C. S. Monitor, April 30, 1920.

★ ★ ★

THE Literary Digest in the number of May first quotes at length from an article of Alfred Pittman in "Factory" dealing with results obtained by the use of moving pictures in the National Cash Register Company at Dayton, Ohio.



The president of the company, John H. Patterson, felt that there were many wastes in the factory which could be corrected through effective suggestions to the employees. It was also the case that sales were running far ahead of the output. Mr. Patterson decided that visualization of the situation through moving pictures was the most promising method of remedying the condition and consequently employed a scenario expert who had experience in handling men. That man spent a number of weeks in studying the situation and getting in close touch with the workers. At the end of that time, he prepared his scenario and made his pictures with the aid of the most efficient cameramen.

When the results of his labor were thrown before the employes on the screen of the factory auditorium, the workers were made to realize as never before the numerous small ways in which they wasted the company's time and materials and their own energy. Lack of conscientious regard of closing hours; failure to concentrate on the work in hand; surreptitious reading of papers; gossip; powdering of shiny noses; absence of responsibility in preserving small tools used in various processes; carelessness; lack of system; and many other thefts of time were presented in such an interesting and forcible manner that they were made impressive and unforgettable. A diagram showing statistically the proportion of income lost through wasted time was an argument that convinced.

Since it was results that were sought and not mere amusement, it is interesting to know that this method of "painless education" has paid. It has been observed by the management that many of the practices set forth in the pictures have been to a great extent discontinued. Moreover there has been a continual rise in the output per man during the last few weeks.

This is but one of many experiments that have been and are being made in the industrial world which constitute a growing mass of most impressive evidence on the educative value of motion pictures.

THE May number of Current Opinion publishes an interesting little article on "Movies in the Time of William Shakespeare," in which it is stated that the puppet show and shadow-play, together with exhibitions of mechanical moving pictures and organs, with dancing figures of Elizabethan times formed the embryo from which has developed our modern moving pictures. Numerous records extant prove that this form of entertainment was indeed popular. On July 14, 1572, for instance, the Lord Mayor of London was asked "to permitte libertie to certein Italiann plaiers to make shewe of an instrument of strange motions." On September 25, 1632, certain players in Coventry were licensed "to set forth and shew an Italiann motion with divers and sundry storyes in it." In the light of these facts, it is believed that many metaphorical allusions to motions, shadows, and shadow plays found in Elizabethan and later literature will perhaps prove less cryptic to commentators.

★ ★ ★

A SECOND article in the May Current Opinion gives a detailed account of the plans that are being made to celebrate the three hundredth anniversary of the landing of the Pilgrim Fathers in America. England is planning for this occasion "Tercentenary meetings in many of its churches; Holland is to commemorate the event in late August with a celebration in which many prominent officials will take part; in America, hundreds of thousands of dollars are being appropriated from national and state treasuries to be used for this purpose. A huge statue of Massasoit, the Indian friend of the Pilgrims, is proposed to overlook Plymouth harbor; the removal of Plymouth Rock, which was raised above the tide in 1741, to its original place is also being discussed. The article contains further a discussion of the social and historic significance of the landing of the Pilgrims.

The result of the international observance of this great event will be, according to the view of Lord Weardale, Chairman of the Executive of the Anglo-American Society, the binding more closely together



the people of Great Britain and America with great thoughts and purposes, inspired by "the common and glorious heritage from the past."

\* \* \*

ON April 30th, at the Cafe Boulevard, New York City, an informal dinner was given by the Pathescope Company of America, to an invited company of about 50 representative educators. It was a significant event for all those interested in the progress of visual education, not only for the speeches made there by prominent educators, but also for the demonstration given by Mr. Cook, President of the Pathescope Company, of a new model Pathescope far superior to the old machine which was officially adopted for New York schools about five years ago. (For detailed information on this machine, our readers should address The Pathescope Company of America, 35 West 42nd street, New York City, or 17 North Wabash avenue, Chicago, Ill.)

The dinner was attended by representatives of the Educational Department of Universal Films, of the Educational Film Magazine, and of Visual Education; the rest of the company consisted entirely of High School principals and superintendents. Addresses were given by Dr. Ernest L. Crandall, Director of Lectures, New York Board of Education, on "Some Recent Experiments in Visual Education;" by Mr. Don Carlos Ellis, Director of Educational Production, Universal Film Manufacturing Company, on "The Plan of Films in Classroom Instruction;" by Mr. Wm. P. McCarthy, Principal Public School No. 52, Bronx, on "Selection of Projectors for School Use;" and by Dr. Edward W. Stitt, District Superintendent of Schools, New York City, on "Do We Teachers Talk Too Much?"

\* \* \*

*The following is an extract freely translated from a long article in "L'Illustration" for the 10th day of January, 1920. It is an elaborate account of the newly perfected cinematograph for colored pictures which is announced as completed by Gaumont & Co., one of the foremost motion picture firms in France. The article contains diagrams and photographs which make exceedingly clear the working of the new machine.*

THE Academy of Sciences on the 10th of November last enjoyed a demonstration by the Chief Engineer of the Gaumont Company of their latest device for reproducing moving subjects in colors. Today these fascinating exhibitions are freely being offered to the public. This time it is really cinematography in colors—a thing which can be obtained by everyone without handling color materials at all. The processes are simple and short, as the celluloid film itself, although in black and white as usual, brings out upon the screen the infinitely varied shadings of natural color. The negatives themselves are identical in appearance with the regular film which has been projected for the past 25 years throughout the world.

In 1912 M. Gaumont gave a few demonstrations which proved that he had gone furthest along the track toward this end. In 1914 he had almost reached the goal when the war brutally ended his researches. In 1919 he is there. We have already seen all the colors in all their infinite shades of value reproduced by the combination of the three fundamental colors which we call for simplicity's sake green, red, and blue. (The actual shades established after long experimentation are a yellowish green, an orange red, and a blue violet.) If, then, one could take three separate snapshots of the subject upon an ordinary film, but in such a way that one of the negatives should be made only by the green rays, the second by the red rays, and the third by the blue rays, these images would have absorbed all the coloring which was formerly distributed throughout the whole composition. We should have then a three-fold negative, each of slightly different values but all three black and white. Then if the positive obtained by direct print should be reflected back in a mass upon the screen, we should have the same blending of green, red, and blue rays, identical in quantity and arrangement as the rays which first struck the film when the picture was taken. In other words, therefore, the picture would in-

evitably reproduce the exact color of every point in the subject.

#### *Chemical and Mechanical Difficulties*

This is all quite simple but here, for instance, was one obstacle to overcome. The sensitive emulsion ordinarily used in photography is scarcely affected by the red rays. Witness the red light used in photographic laboratories. Inversely, this emulsion is much more sensitive to blue and violet rays than to any other, so much so that if it were employed for this new device the photograph of the green rays would hardly have time to be impressed on the emulsion before the photograph of the blue rays would be over-exposed, and while the red rays would still have produced no effect at all.

The panchromatization of the films—that is, the process of sensitizing them to all colored rays—is an industrial process well known for 15 years past. The difficulty in the present instance is this; hitherto the emulsion has not been equally sensitive for all these rays. It has always been necessary to use screens to retard the action of the blue and violet rays in the landscape, and therefore panchromatization has always diminished the speed of the emulsion. This defect becomes particularly serious when one attempts to use it in motion pictures at high rapidity with the subjects in movement. M. Gaumont, therefore, could not accomplish his work until he had perfected this vital element, namely, an emulsion which was sensitive at the same speed to these three primary colors. He found the emulsion.

After this chemical difficulty arose a mechanical one. It was necessary in the new machine to project in a single flash three images and to repeat this action sixteen times a second, while in the standard machines this speed is needed for one image only. In other words, the new film must be moved three times as rapidly, with decided danger of tearing the celluloid. He therefore reduced about one-third the height of each frame in the film (to 14 mm. instead of 19 mm.) and thus needed only double speed to achieve his purpose. He found, inci-

dentally, that the oblong form thus given to the little pictures lent itself very happily to landscape and panorama, which will be one of the principal fields, of course, of the new color art.

#### *The Apparatus*

The camera for taking the new pictures is formed of three superposed lens chambers, placed as close as possible to each other so that the three lenses will take the view from almost identical angles. Across the rear of these chambers at each partial revolution of the star wheel passes, in a downward direction, a length of fresh film long enough to receive the three images side by side at a single exposure. It is evident now that this process would give us no new effect whatever upon the film. We simply would have three images instead of one, each produced by the total multi-colored rays given off by the subject and nothing more. The function, however, of each of these chambers is to receive rays of different nature and only these rays. If, therefore, we place behind the lens of the upper chamber a disc colored in the primary green, the emulsion at the back of the chamber will receive only the green rays emanating from the subject. Similarly a red disc is placed behind the central lens and a blue disc behind the lowest lens of the three. These discs are called selective screens because they make a veritable selection of the rays from the subject which they will record; but the impression on the emulsion, I repeat again, whatever the color of the ray, is translated onto the film in black and white.

The projection apparatus is as follows:

The source of light sends its rays through the three negatives of the film; selective screens, respectively green, red, and blue, interposed between the film and the lenses, allow to pass only the same rays which came through said lens when the picture was taken. These three images then are thrown at the same time upon the screen in such a way that they are superposed with abso-

(Continued on page 64)

# SOCIETY FOR VISUAL EDUCATION, INC.

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# Among Other Things They Say

*From an Officer of the National Committee for Better Films*

"I have been intensely interested in reading carefully the April issue of *VISUAL EDUCATION*, especially those articles which deal directly or indirectly with the use of motion pictures.

As a university and seminary trained man, with some local interest in secondary schools, I am pleased to find so many men considering seriously the place of motion pictures in education. As a secretary of an organization which has studied critically the development of the motion picture through every day of the past 11 years, like some of your other correspondents, I have some positive opinions. Among these are several which have come from a rather careful study of the effects of pictures on the lay mind, both mature and formative.

I believe an interesting discussion could be developed with Professor Thurstone, who has written on the educational motion picture, and also with Professor Damon, who has presented some arguments about the motion picture and English literature.

The one topic which has been of intense interest to me is that of the value of indirection, or the round-about or dramatic presentation of ideas to people. I wonder if your magazine will have anything to say about this method of capturing the attention and influencing the minds both of students and adults.

I hope a large number of intelligent parents and those interested in the development of character, as well as those educators technically trained, will join in discussions which you evidently intend to carry on in your magazine. By the interesting exchange of ideas, something worth while will slowly be developed toward the more complete understanding of those forces which underlie conduct, mental processes and character formation.

Wishing you abundant success in this most important field.

O. G. C.,  
*Secretary and Editor.*

*Coming from Colorado*

"I have been very much interested in the motion picture as a means of classroom instruction, but so far have found that most of the so-called educational films did not hit the spot; that is, I could not see how they could be used in any way except for livening up school exercises. I think the movement you have started will be of great value." . . .

R. R.,  
*Superintendent.*

*Heard from Minnesota*

"This is not only good work but is and must be a vital part of public school education; also of religious education."

R. M. W.,  
*University Professor.*

*Coming from an Iowa Superintendent*

. . . "I am very much interested in *VISUAL EDUCATION* and hope that I may receive much inspiration from the magazine."

T. C. G.

*This from an Indiana Lawyer*

. . . "I found on my desk a copy of the magazine pertaining to visual education. I took it home with me the other night and started to read it from cover to cover. Visual education is a wonderful thing, and I believe you have started a campaign of education on that subject that will eventually result in more good and benefit to our school system than anything that has been suggested within the past century. If subsequent issues of your magazine are as instructive and as interesting as the last issue, no American citizen concerned with future development of our people and the preservation of our present form of government can afford to do without it." . . .

B. K.

*What a Principal in St. Louis says*

. . . "I have become so much convinced of the efficiency and practicability of teaching through the moving picture that I intend, if I see the least possibility of prospect for success, to take a

portable machine and the best films that can be procured and go from coast to coast with educational and religious films, unless I can affiliate with some concern or organization already carrying on this work."

R. A. R.

*From Down South*

"I am writing an essay on the influence of the film, its defects and possibilities. Will you please send two numbers that you think will be of assistance? I have the January, 1920, number and find it very helpful."

E. S.,  
Teacher.

*Comment from a New Jersey Club Woman*

"I am greatly interested in the complimentary copy of your first number and enclose cheque to pay for a year's subscription. The copy is to be sent to the chairman of the Moving Picture Committee of this Association, as I know it will materially help her in her work."

A. L.,  
President.

*An Iowa Superintendent remarks that*  
". . . "The work being done by the Society is giving elementary educational

methods the greatest intellectual punch that has been administered since the introduction of the printing press. The driving power behind this punch is destined to knock the 'shun' out of education."

D. M. B.

*From the Western Coast*

"It has been stated by eminent authority that of all the senses, sight leads as an avenue of sense perception. . . . That the motion picture can vitalize the subject matter and make the work of the school more real is no longer a dream. . . . It is not a substitute for work, but stimulates the imagination and presents facts in a thought-provoking way. . . . Who can foretell the possibilities of the motion picture in the class room of tomorrow? The U——— School is one of the many that are attempting to measure the results obtained by using Visual Education in connection with regular class room work. . . . Over one hundred films have been shown in the class room during the past year, at an expense not exceeding seventy-five dollars. The films have been of much value to classes studying Geography, English, and History."

R. G. D.,  
Principal.

## Announcement by the N. E. A. Press Service

(Continued from page 29)

### ADEQUATE SALARIES FOR TEACHERS

P. P. Claxton, U. S. Commissioner of Education, Washington, D. C.

Thursday Afternoon, July 8, 1920, 2:00 o'clock

### THE PART THE TEACHER SHOULD PLAY IN THE ADMINISTRATION OF THE SCHOOL SYSTEM (4 minutes)

M. G. Clark, Superintendent City Schools, Sioux City, Iowa

Cornelia Adair, President of National League of Teachers Association, Richmond, Va.

Jessie A. Skinner, Teacher of Mathematics, City Schools, Portland, Oregon.

Helen Herron, City Schools, New Orleans, La.

J. R. Kirk, President State Teachers College, Kirksville, Mo.

Agnes Winn, Grade Teacher, City Schools, Seattle, Wash.

O. C. Pratt, Superintendent City Schools, Spokane, Wash.

### EDUCATION FOR THE NEW ERA

Payson Smith, Commissioner of Education, Boston, Mass.

(Continued on page 56)

# The Film Field

**I**N response to numerous inquiries from schools having projectors which are forced to stand idle for lack of usable materials, VISUAL EDUCATION hopes gradually to supply information which will enable such schools to get satisfactory programs as they are needed. It is a difficult task which will require much time and effort on our part, and we ask merely patience on yours.

In this issue we list thirteen of the largest exchange systems in the country, with the address of each branch office. These concerns are occupied mainly, of course, with supplying theatrical material to professional exhibitors, but their stock usually includes a small percentage of "educational films." Schools desiring film material may write to the nearest exchange of any or all of the thirteen companies, requesting information available on films suitable for the particular purpose and occasion. (We would caution the school, when such information comes, to make due allowance for advertising phraseology and not to order a film solely on the strength of the company's fluent assurance of its educational worth. Films should be viewed by qualified judges before being shown to school children.)

We also list a few of the many "educational" films now on the market, with the exchanges handling them. When the film is not handled by any of the thirteen exchanges here listed, the name and address of the producer are given.\* If a school wishes to rent one of the films listed with its exchange, it is necessary merely to find the nearest branch of that exchange in the reference list and write for information concerning the film. If the film is not listed with one of the thirteen exchanges, write the producer asking him to name the point of distribution nearest the school.

Constant disappointment must be expected. Often the nearest exchange will not have a print in stock; or the film will be out and unavailable on the date it is needed; or the film will be worn and in bad condition; or the price will be hopelessly high; or the shipment will go astray; or slight attention will be paid to your communication; etc., etc.

In the course of time, however, as we shall be able to add more exchange systems to our reference lists, increase the number of titles in our film lists, eliminate films which have been withdrawn from circulation, and start a section for reviews of important films by the VISUAL EDUCATION staff—a semblance of order and some approach to satisfaction ought to come out of the present chaotic and discouraging situation.

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\*Addresses of producers named in the List of Films in this issue are as follows:  
Atlas Educational Film Co., 1111 South Blvd., Oak Park, Ill.  
Beseler Film Co., 71 W. 23rd St., New York City.  
Carter Cinema Co., 220 W. 42nd St., New York City.  
Educational Films Corporation, 729 Seventh Ave., New York City.  
Scientific Film Corporation, 13 Dutch St., New York City.  
Worcester Film Corporation, 145 W. 45th St., New York City.

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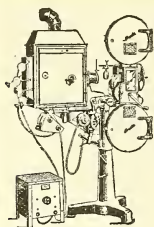
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## Reference List of Commercial Film Exchanges

(Address all inquiries to the nearest exchange)

### AMERICAN RED CROSS

Atlanta, Ga.....249 Ivy St.  
Boston, Mass.....108 Mass. Av.  
Chicago, Ill.....Pioneer Bldg.  
Cleveland, Ohio.....Plymouth Bldg.  
Denver, Colo.....14th and Welton Sts.  
Minneapolis, Minn.....423 5th St. S.  
New Orleans, La. Wash'g'tn Artillery Hall  
New York City.....44 E. 23d St.  
Philadelphia, Pa.....134 S. 16th St.  
San Francisco, Cal.....864 Mission St.  
Seattle, Wash.....White Bldg.  
St. Louis, Mo.....Equitable Bldg.  
Washington, D. C.....411 18th St. N. W.

### FAMOUS PLAYERS-LASKY CORP.

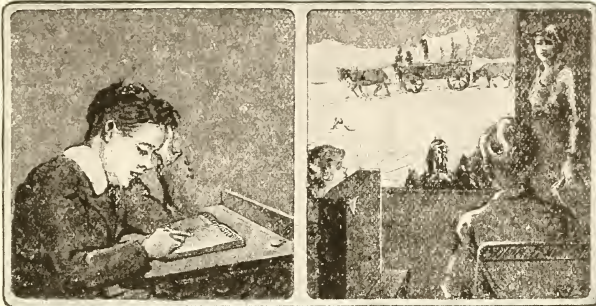
Atlanta, Ga.....51 Luckie St.  
Boston, Mass.....8 Shawmut St.  
Buffalo, N. Y.....145 Franklin St.  
Charlotte, N. C.....28 W. 4d St.  
Chicago, Ill.....845 S. Wabash Av.  
Cincinnati, Ohio.....107 W. 3d St.  
Cleveland, Ohio.....811 Prospect Av.  
Dallas, Texas.....1902 Commerce St.  
Denver, Colo.....1747 Welton St.  
Des Moines, Iowa.....415 W. 8th St.  
Detroit, Mich.....63 E. Elizabeth St.  
Kansas City, Mo.....2024 Broadway Av.  
Los Angeles, Calif.....112 W. 9th St.  
Minneapolis, Minn.....608 1st Av. N.  
New Haven, Conn.....132 Meadow St.  
New Orleans, La.....814 Perdido St.  
New York City.....729 7th Av.  
Oklahoma City, Okla.....128 W. 3d St.  
Omaha, Neb.....208 S. 13th St.

Philadelphia, Pa.....1219 Vine St.  
Pittsburgh, Pa.....1018 Forbes St.  
Portland, Me.....85 Market St.  
Portland, Ore.....14 N. 9th St.  
Salt Lake City, Utah.....133 E. 2d South St.  
San Francisco, Calif.....821 Market St.  
Seattle, Wash.....2017-19 3d St.  
St. Louis, Mo.....3929 Olive St.  
Washington, D. C.....421 10th St. N. W.

### FIRST NATIONAL EXHIBITORS CIRC- CUI, INC.

Atlanta, Ga.....146 Marietta St.  
Boston, Mass.....35 Piedmont St.  
Chicago, Ill.....110 S. State St.  
Cleveland, Ohio.....402 Sloan Bldg.  
Buffalo, N. Y.....215 Franklin St.  
Dallas, Texas.....1924 Main St.  
Denver, Colo.....1518 Welton St.  
Des Moines, Iowa.....Garden Theatre Bldg.  
Detroit, Mich.....63 E. Elizabeth St.  
Indianapolis, Ind.....24 W. Washington St.  
Kansas City, Mo.....317 Gloyd Bldg.  
Los Angeles, Calif.....833 South Broadway  
Louisville, Ky.....Nat. Theatre Bldg.  
Milwaukee, Wis.....402 Toy Bldg.  
Minneapolis, Minn.....  
.....408-18 Loeb Arcade Bldg.  
New Haven, Conn.....126 Meadow St.  
New Orleans, La. Tulane Av. & Liberty St.  
New York City.....6 W. 48th St.  
Oklahoma City, Okla.....127 S. Hudson St.  
Omaha, Neb.....314 S. 13th St.  
Philadelphia, Pa.....1339 Vine St.  
Pittsburgh, Pa.....414 Ferry St.

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 Seattle, Wash. .... 2023 3d Av.  
 Washington, D. C. .... 916 G St. N. W.

### FOX FILM CORPORATION

Atlanta, Ga. .... 111 Walton St.  
 Boston, Mass. .... 54-56-58 Piedmont St.  
 Buffalo, N. Y. .... 209 Franklin St.  
 Chicago, Ill. .... Mallery Bldg.  
 Cincinnati, Ohio. .... 514 Elm St.  
 Cleveland, Ohio. .... 750 Prospect Av.  
 Dallas, Texas. .... 1907 Commerce St.  
 Detroit, Mich. .... Mack Bldg.  
 Denver, Col. .... 1442 Welton St.  
 Indianapolis, Ind. .... 232 N. Illinois St.  
 Kansas City, Mo. .... 928 Main St.  
 Los Angeles, Calif. .... 734 S. Olive St.  
 Minneapolis, Minn. .... 608 First Av. N.  
 New York City. .... 130 W. 46th St.  
 New Orleans, La. .... 723-25 Poydras St.  
 Omaha, Neb. .... 315 S. 16th St.  
 Philadelphia, Pa. .... 1333 Vine St.  
 Pittsburgh, Pa. .... 121 Fourth Av.  
 Salt Lake City, Utah. .... 46 Exchange Place  
 San Francisco, Calif. .... 243 Golden Gate Av.  
 Seattle, Wash. .... 2006 Third Av.  
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 Washington, D. C. .... 305 9th St. N. W.

### GOLDWYN DISTRIBUTING CORPORATION

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 Cleveland, O. .... 403 Standard Theatre Bldg.  
 Dallas, Texas. .... 1922 Main St.  
 Denver, Colo. .... 1440 Welton St.  
 Detroit, Mich. .... Film Exchange Bldg.  
 Kansas City, Mo. .... 1120 Walnut St.  
 Los Angeles, Calif. .... 912 S. Olive St.  
 Minneapolis, Minn. .... 16 N. 4th St.  
 New Orleans, La. .... 714 Poydras St.  
 New York City. .... 509 5th Av.  
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 Pittsburgh, Pa. .... 1201 Liberty Av.  
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 Cleveland, Ohio. .... 404 Sincere Bldg.  
 Dallas, Texas. .... 1924 Main St.  
 Denver, Col. .... 1721 California St.  
 Detroit, Mich. .... 51 Elizabeth St. E.  
 Kansas City, Mo. .... 928 Main St.  
 Los Angeles, Calif. .... 820 S. Olive St.  
 Little Rock, Ark. .... 106 S. Cross St.  
 Minneapolis, Minn. .... Produce Exch. Bldg.  
 New Haven, Conn. .... 126 Meadow St.  
 New York City. .... 729 7th Av.  
 New Orleans, La. .... Saenger Bldg.  
 Oklahoma City, Okla. .... 127 S. Hudson St.  
 Omaha, Neb. .... 211 S. 13th St.  
 Philadelphia, Pa. .... 1321 Vine St.  
 Pittsburgh, Pa. .... 1018 Forbes St.  
 Salt Lake City, Utah. .... 20 Post Office Place  
 San Francisco, Calif. .... 55 Jones St.  
 St. Louis, Mo. .... 3313-A Olive St.  
 Seattle, Wash. .... 2002 Third Av.  
 Washington, D. C. .... 916 G St. N. W.

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 Buffalo, N. Y. .... 269 Main St.  
 Charlotte, N. C. .... 2 S. Graham St.  
 Chicago, Ill. .... 220 S. State St.  
 Cincinnati, Ohio. .... 124 E. 7th St.  
 Cleveland, Ohio. .... 750 Prospect Av. S. E.  
 Dallas, Texas. .... 2012½ Commerce St.  
 Denver, Colo. .... 1436 Welton St.  
 Des Moines, Iowa. .... 316 W. Locust St.  
 Detroit, Mich. .... 63 E. Elizabeth St.  
 Indianapolis, Ind. .... 52-54 W. New York St.  
 Kansas City, Mo. .... 928 Main St.  
 Los Angeles, Calif. .... 732 S. Olive St.  
 Milwaukee, Wis. .... 174 2d St.  
 Minneapolis, Minn. .... 608 1st Av. N.  
 Newark, N. J. .... 6 Mechanic St.  
 New Orleans, La. .... 936 Common St.  
 New York City. .... 1600 Broadway  
 Oklahoma City, Okla. .... 119 S. Hudson St.  
 Omaha, Neb. .... 1417 Harney St.  
 Philadelphia, Pa. .... 211 N. 13th St.  
 Pittsburgh, Pa. .... 938 Penn Av.  
 Salt Lake City, Utah. .... 64 Exchange Place  
 San Francisco, Calif. .... 985 Market St.  
 Seattle, Wash. .... 2113 3d Av.  
 St. Louis, Mo. .... 3210 Locust St.  
 Spokane, Wash. .... 12 S. Washington St.  
 Washington, D. C. .... 601 F St. N. W.

### REPUBLIC PICTURES

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 Cincinnati, Ohio. .... Main and 7th Sts.  
 Cleveland, Ohio. .... Belmont Bldg.  
 Dallas, Tex. .... 1905 Commerce St.  
 Denver, Colo. .... 1753 Welton St.  
 Detroit, Mich. .... 63 E. Elizabeth St.  
 Kansas City, Mo. .... 1612 Main St.  
 Los Angeles, Calif. .... 736 S. Olive St.  
 Minneapolis, Minn. .... Produce Exch. Bldg.  
 New York City. .... 126 W. 46th St.  
 Philadelphia, Pa. .... 1315 Vine St.  
 Pittsburgh, Pa. .... 1201 Liberty Av.  
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 Cincinnati, Ohio. .... 224 E. 7th St.  
 Cleveland, Ohio. .... 750 Prospect Av.  
 Dallas, Texas. .... 1807 Main St.  
 Denver, Colo. .... 1724 Welton St.  
 Detroit, Mich. .... 63 Elizabeth St.  
 Indianapolis, Ind. .... 111 W. Maryland St.  
 Kansas City, Mo. .... Gloyd Bldg.  
 Los Angeles, Calif. .... 825 S. Olive St.  
 Milwaukee, Wis. .... 301 Enterprise Bldg.  
 Minneapolis, Minn. .... 309 Loeb Arcade Bldg.  
 New Orleans, La. .... 815 Perdido St.  
 New York City. .... 1600 Broadway  
 Oklahoma City, Okla. .... 7 S. Walker St.  
 Omaha, Neb. .... 1306 Farnum St.  
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Cleveland, Ohio	306 Sloan Bldg.
Dallas, Texas	1917 Main St.
Denver, Colo.	1728 Welton St.
Detroit, Mich.	63 E. Elizabeth St.
Indianapolis, Ind.	224 Wimmer Bldg.
Kansas City, Mo.	920 Main St.
Los Angeles, Calif.	736 S. Olive St.
Minneapolis, Minn.	Film Exchange Bldg.
New Haven, Conn.	19 Portsea St.
New Orleans, La.	712 Poydras St.
New York City	126 W. 46th St.
Omaha, Neb.	1512 Howard St.
Philadelphia, Pa.	1308-10-12 Vine St.
Pittsburgh, Pa.	1201 Liberty Av.
St. Louis, Mo.	3617 Washington Av.
Salt Lake City, Utah	160 Regent St.
San Francisco, Cal.	985 Market St.
Seattle, Wash.	308 Virginia St.
Washington, D. C.	525 13th St. N. W.

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Boston, Mass.	48 Melrose St.
Buffalo, N. Y.	86 Exchange Place
Chicago, Ill.	5 S. Wabash Av.
Cincinnati, Ohio	215 E. 5th St.
Cleveland, Ohio	506 Sloan Bldg.
Dallas, Texas	1814 Commerce St.
Denver, Col.	1435 Champa St.
Detroit, Mich.	55 E. Elizabeth St.
Kansas City, Mo.	22d and Grand Av.
Los Angeles, Calif.	643 S. Olive St.
Milwaukee, Wis.	172 Toy Bldg.
Minneapolis, Minn.	16 N. 4th St.
New Haven, Conn.	130 Meadow St.
New Orleans, La.	610 Canal St.
New York City	1457 Broadway
Omaha, Neb.	1222 Harney St.
Philadelphia, Pa.	13th and Vine Sts.
Pittsburgh, Pa.	414 Penn Av.
St. Louis, Mo.	3321 Lindell Blvd.
Salt Lake City, Utah	58 Exchange Place
San Francisco, Cal.	86 Golden Gate Av.
Seattle, Wash.	2010 3d Av.
Washington, D. C.	916 G St. N. W.

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Buffalo, N. Y.	35 Church St.
Butte, Mont.	52 E. Broadway
Charleston, W. Va.	
Chicago, Ill.	220 S. State St.
Cincinnati, Ohio	531 Walnut St.
Cleveland, Ohio	850 Prospect Av.
Columbus, Ohio	
Denver, Col.	1422 Welton St.
Des Moines, Iowa	918-920 Locust Av.
Detroit, Mich.	63 E. Elizabeth St.
Evansville, Ind.	
Fort Smith, Ark.	
Indianapolis, Ind.	113 W. Georgia St.
Kansas City, Mo.	214 E. 12th St.
Los Angeles, Cal.	822 S. Olive St.
Louisville, Ky.	
Milwaukee, Wis.	172 2d St.
Minneapolis, Minn.	719 Hennepin Av.
Oklahoma City, Okla.	116-118 W. 2d St.
Omaha, Neb.	1304 Farnum St.
Pittsburgh, Pa.	938-940 Penn Av.
Portland, Ore.	405-407 Davis St.
Salt Lake City, Utah	56 Exchange Place
San Francisco, Cal.	121 Golden Gate Av.
Sioux Falls, S. D.	
Spokane, Wash.	16 S. Washington St.
St. Louis, Mo.	2116 Locust Av.
Wichita, Kan.	209 E. First Av.

**VITAGRAPH**

Albany, N. Y.	48 Howard St.
Atlanta, Ga.	111 Walton St.
Boston, Mass.	131 Arlington St.
Buffalo, N. Y.	86 Exchange St.
Chicago, Ill.	207 S. Wabash Av.
Cincinnati, Ohio	Cor. 7th and Main Sts.
Cleveland, Ohio	2077 E. 4th St.
Dallas, Texas	1900 Commerce St.
Denver, Col.	734 Welton St.
Detroit, Mich.	63 E. Elizabeth St.
Kansas City, Mo.	17th and Main Sts.
Los Angeles, Cal.	643 S. Olive St.
Minneapolis, Minn.	608 1st Av. N.
New Orleans, La.	420 Camp St.
New York City	1600 Broadway
Omaha, Neb.	1111 Farnum St.
Philadelphia, Pa.	1227 Vine St.
Pittsburgh, Pa.	117 4th Av.
St. Louis, Mo.	3310 Lindell Blvd.
Salt Lake City, Utah	62 Exchange Place
San Francisco, Cal.	985 Market St.
Seattle, Wash.	115 Olive St.
Washington, D. C.	712 11th St. N. W.

**Announcement by the N. E. A. Press Service***(Continued from page 49)***WHAT SHOULD BE DONE TO KEEP HIGH CLASS SUPERINTENDENTS IN THE SCHOOLS (4 minutes)**

- E. O. Holland, President Washington State College, Pullman, Wash.
- William M. Davidson, Superintendent of Schools, Pittsburgh, Pa.
- E. O. Sisson, President University of Montana, Missoula, Mont.
- Charles E. Chadsey, Dean of Education, University of Illinois, Champaign, Ill.

**Thursday Evening, July 8, 1920, 7:30 o'clock****FINANCING OUR PUBLIC SCHOOLS****RURAL SCHOOLS**

- W. C. Bagley, Professor of Education, Teachers College, Columbia University, New York, N. Y.

**FROM THE BUSINESS MAN'S STANDPOINT**

- Frank A. Vanderlip, New York, N. Y.

**FROM THE STANDPOINT OF THE STATE**

- Frank O. Lowden, Governor of the State of Illinois, Springfield, Ill.

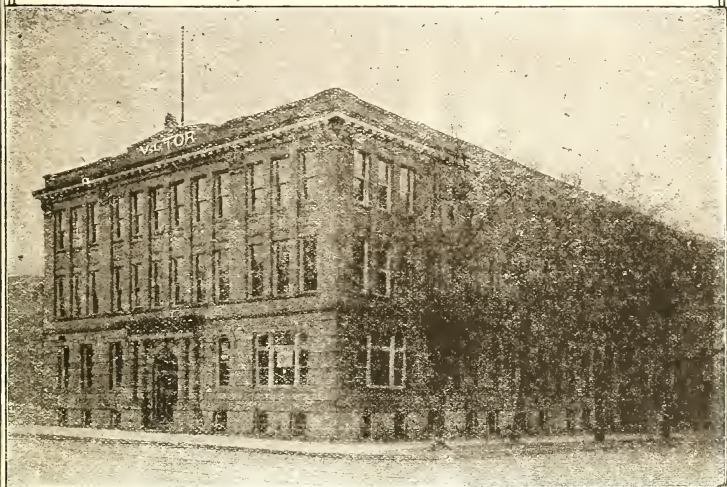
**Friday Forenoon, July 9, 1920, 9:00 o'clock****IDEALS AND STANDARDS OF THE AMERICAN HOME**

- Sarah Louise Arnold, Dean of Simmons College, Boston, Mass.

**BUSINESS SESSION**



*The New Home of*  
**Victor Picture Projectors**



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**Motion Picture Machines  
Stereopticons and  
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**VICTOR ANIMATOGRAPH CO., Inc.**  
**DAVENPORT, IOWA, U. S. A.**

## List of Films

Produced by various commercial companies and intended for general educational use. All entries are 1 reel (1000 ft.) in length unless otherwise specified.

(In offering these selections, VISUAL EDUCATION in no way guarantees the value or suitability of the films. This can be done only when we have personally viewed the picture. The list represents merely the most careful choice possible to make from data given out by the producing companies. If such information, however, promises to be helpful to schools, these lists can be greatly extended in later issues. Further, VISUAL EDUCATION plans to give brief critical reviews and synopses of important "educational" releases each month, as soon as arrangements are completed with the numerous producers to submit their productions for viewing by our staff. Only the films so reviewed by our staff should be considered as having VISUAL EDUCATION's recommendation, qualified or unqualified as the case may be.)

### AMERICAN RED CROSS FILMS

- No. 10—REPATRIATES AT EVIAN.
- No. 11—FIELD SERVICE ON THE WESTERN FRONT.
- No. 12—IN THE RUINS OF RHEIMS. French official war picture.
- No. 13—FRANCE IN ARMS. French official war picture. 5 reels.
- No. 14—A—PERSHING'S MEN IN FRANCE. Last stages of training and drilling in the use of liquid fire.
- No. 15—THE SPIRIT OF THE RED CROSS. Romance of Red Cross work under fire. 2 reels.
- No. 16—THE MAKING OF A NURSE. Taken in New York Hospital.
- No. 100—FOURTH OF JULY IN PARIS. America's veterans marching in Paris.
- No. 101—SOOTHING THE HEART OF ITALY.
- No. 102—THE REFUGEES OF EVIAN. Germans returning war prisoners to devastated homes.
- No. 104—FOR ALL HUMANITY. Photodrama of services of Red Cross to soldiers and their families. 3 reels.
- No. 105—SERBIA VICTORIOUS. Soldier's relief scenes and decorations of workers.
- No. 106—FIRST AID ON THE PIAVE. Heroic deed of Lieut. Edward M. McKey, Red Cross.
- No. 107—THE KIDDIES OF NO MAN'S LAND. Care of orphaned French and Belgian children.
- No. 108—REBUILDING BROKEN LIVES. Providing artificial limbs for injured soldiers.
- No. 109—MARSEILLES. Scenic picture and docks for Red Cross supplies.
- No. 110—A HELPING HAND TO SICILY. Children of Sicily and Palermo cared for.
- No. 111—RUSSIA—A WORLD PROBLEM. Trip of the first American Red Cross Commission.
- No. 112—NEW FACES FOR OLD. Making over faces of mutilated soldiers.
- No. 113—YOUR BOY. Paris panorama from Red Cross hospital.
- No. 114—OUR RED CROSS IN ITALY. Rapid organization for assistance.
- No. 115—HOMEWARD BOUND. Details of the return.
- No. 116—THE PEACE CELEBRATION IN PARIS.
- No. 117—BELGIUM'S DAY OF DAYS. Day of the return of the King and Queen.
- No. 118—DOUGHBOYS AND BOLSHIEVIKI IN ARCHANGEL. Soldiers and the arrival of Red Cross supplies.

- No. 119—WHAT ITALY FOUGHT FOR.
- No. 120—THE GREATEST GIFT. Story of Red Cross propaganda.
- No. 121—ADVANCING WITH THE EAGLE IN ITALY. Landing of the first American troops and the welcome of the Italians.

### TRAVEL AND SCENICS

- KINETO REVIEW—23. NEW YORK—AMERICA'S GATEWAY. (Republic) Sight Seeing on the Island of Manhattan.
- CHAS. URBAN'S MOVIE CHATS. 7TH SERIES. (Republic) Rough Crossing of Irish Channel. Irish Cloth Industry. Affection of Mother Bird for Young. Formation of Chemical Crystals. Otter Hunt in Midlands of England.
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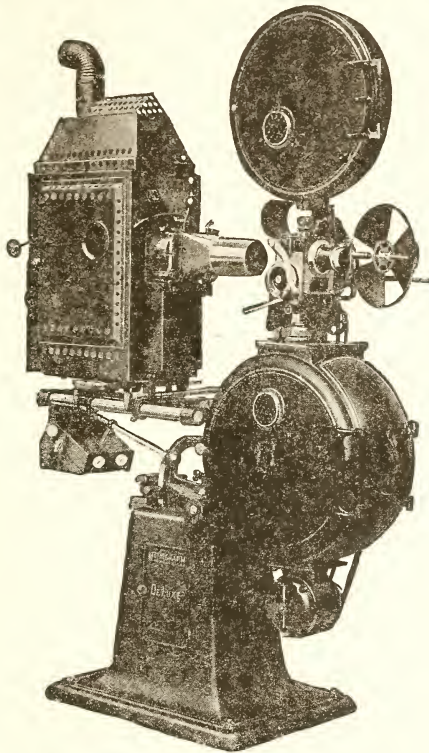
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## Miscellaneous Notes

(Continued from page 43)

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One more difficulty met and overcome by Mr. Gaumont is as follows: Great as is the precision of his machine, minute as is the care bestowed upon the manufacture of the film, there is always the possibility in the projection of an infinitely small displacement of one of the three colors in relation to the two others (such as the very slight play in the mounting of one of the lenses, the expansion or contraction of the celluloid, etc.). A fraction of a millimeter of inaccuracy is sufficient when multiplied to the considerable dimension of the image on the screen to falsify in some degree the coloring of the picture, or at least to rob the image of its perfect clearness. Therefore the lenses have been mounted in such a way that the one in the middle (the red) remains fixed while the two others (the green and the blue) permit of adjustment vertically and horizontally. By this means perfect superposition of the three images is possible. A last refinement in this adjustment device is as follows: It is not the operator in the booth who makes this fine adjustment of the three images on the screen, for he is not advantageously placed for detecting such small inaccuracies. Therefore M. Gaumont has prepared a small electric apparatus by means of which an employee sitting anywhere in the audience can make the adjustment with perfect accuracy as he views the picture.

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# VISUAL EDUCATION

A Magazine Devoted to the Cause of American Education

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Vol. I.

JUNE, 1920

No. 4

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## In This Number

Visual Education in Detroit Schools *J. H. Wilson*

The Regional Treatment of Geography *W. W. Atwood*

Motion Pictures as an Educational  
Agency. A Review *Ernest Horn*

Our School Children and the Movies *E. L. Moulton*

An Inexpensive Model of a Medieval  
Castle *M. L. Bonham, Jr.*



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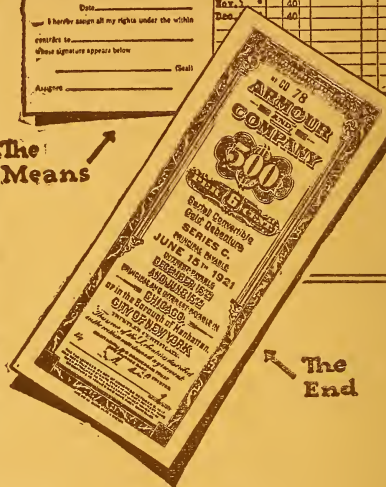
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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President  
FOREST R. MOULTON, Secretary

NELSON L. GREENE, Editor  
HARLEY L. CLARKE, Manager

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327 SOUTH LA SALLE STREET

CHICAGO, ILLINOIS

# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

NELSON L. GREENE, Editor

Published every month except July and August  
Copyright, June 1920, by the Society for Visual Education, Inc.

Volume I

JUNE, 1920

Number 4

## Editorial

THIS is the June number of VISUAL EDUCATION. If you wish to see also the enlarged September number, do not fail to send us a postal confirming your present address or informing us of any change in same. We cannot afford to risk the non-arrival of even a small fraction of our mailing.

IT is an exceedingly comfortable sensation for the holder of an opinion to receive ample confirmation of the opinion from an authoritative source. When 1920 was just starting on its expensive way, we opined that the educational world needed and would appreciate a serious publication devoted to the cause of visual education in American schools and communities. We stated our faith and acted upon it. The January number of Visual Education appeared without a single subscriber, without a single line of advertising, and also without the slightest intention of failing. In times when high prices have become a national habit and profiteering an almost universal instinct, we had the temerity to adopt a \$1.00 subscription price, thus proving to our colleagues that there is still something of value that the venerable and once respected coin will buy. Since those days of seeming rashness, we have published four numbers of the magazine containing respectively 40, 48, 64, and 72 pages. The respective amounts of advertising in these numbers were 0,  $5\frac{1}{8}$ ,  $12\frac{1}{2}$ , and 18 pages. The \$1.00 still stands as the subscription price and is more sure of its footing than before. The visual movement concerns every teacher in the United States; the magazine belongs to the movement; therefore, the price should be kept within the reach of all, and we intend to keep it there.

The faith that was in us has already been justified. The influx of subscriptions and epistolary enthusiasms has not ceased for a single day; the magazine force, ninefold greater than in January, is being steadily increased to keep pace with this vigorous growth; and plans are now formulated for a publication of double the present size and of undiminished quality by January, 1921.

VISUAL EDUCATION has passed its infancy period, but not without experiencing the ills and sufferings incident thereto. When we reflect, for instance, upon our paper, printing, and postal struggles, how little we incline to agree with Wordsworth singing, "Heaven lies about us in our infancy!" As applied to our own biography, a word could well be changed in the immortal line with decided gain in truth, whatever the loss to propriety. The poet is equally inaccurate as he sings on, "Shades of the prisonhouse begin to close upon the growing boy." We find quite the contrary to be true. We are just beginning to feel the sensation of breathing in the open.

This feverish initial stage, however, has not been barren of results. Tens of thousands of American teachers and non-professional friends of education have had convincing proof of the earnestness and sincerity behind our efforts; they have seen that there is a mass of significant material on the subject of visual education which deserves publicity and which has hitherto lacked an adequate medium; they have understood as never before the universality of the interest in the visual movement throughout the country and the power that lies in the national impulse toward visual aids in achieving a broader and deeper preparation of America's citizens-to-be.

As for ourselves, we have learned far more than our readers. Among other things we have learned that the visual field is wide enough to absorb the entire and utmost energies of a magazine that aims to cover it. The field is broadening constantly and our policies and facilities are being shaped to permit of commensurate growth indefinitely. We have learned that public interest in the question vastly exceeds the present activity and achievement and the ratio bids fair to continue for a long time to come. This intellectual appetite must be appeased and we find that a great variety in printed pabulum is required to satisfy our multi-minded reading public. Practically every article—we were on the point of saying every paragraph—that has appeared in our previous issues, has been cited by a larger or smaller number of our correspondents as *the* utterance that the national ear has been most eagerly waiting to hear. This selective enthusiasm appears entirely natural when one considers the wide range of our appeal and the innumerable angles from which the general subject may be viewed. Obviously the same elements in a magazine will not interest equally the teacher in a rural school, the State superintendent of public instruction, the university professor of pedagogy, and the United States Senator absorbed in a comprehensive Americanization program for his whole state. We must supply an abundant choice of materials which may be skipped, skimmed, or scanned, as the inclination and taste of each particular reader may direct. Any other procedure would be comparable to the classic example of offering an exclusive stock of radiators for sale in the tropics or of refrigerators among the Eskimos.

---

SUMMER has come. American Pedagogy is taking a deep breath of June, preparing for a change of work or for a more or less unconditional surrender to play. While our colleagues are occupied at loafing or limousining, in study or meditation, we shall seize the welcome chance afforded by a two months' respite from the printing press to carry through a program still more crowded than during our brief past.

The experimental days are passing for us. It is becoming steadily clearer exactly what sort of a magazine VISUAL EDUCATION ought to be. We wish to assure our numerous friends that the schedule of work we have set before us for the summer will show marked results in the appearance, contents and general worth of VISUAL EDUCATION for the ensuing year.

The difficult problem of paper will be solved and negotiations now under

way will insure a paper and cover stock that will leave nothing to be desired. Illustrations can then become a noteworthy feature. Halftone work of the highest quality and special designs for cover, headings and titles, will add artistic distinction to the publication.

The written matter will be of exceptional variety and value. Our modest beginnings thus far have touched upon a few aspects only of the great subject. *As more and more of our leading educators feel drawn to give their serious attention to the movement, which is rapidly taking on such profound significance for the cause of American culture, our readers will have in hand the most exhaustive treatment of every phase of the subject, by the ablest authorities, that can be obtained in any single publication.*

Physiologists and psychologists will treat the broad field of vision; the process of visual interpretation; the relative appeal of black and white, colored, still, and moving pictures; the effects on attention of movement and the cessation of movement; individual study as compared to the group study of pictures, models, maps, and diagrams; the receptivity and retention of different kinds of matter visually presented; the picture as a stimulus or drug to independent thinking; the question of combining visual and oral methods of presentation, etc. There will be departmental articles on pedagogical methods with pictures as applicable in various subjects of the curriculum; reports of scientific tests of teaching values conducted throughout the country; accounts of actual workings of visual instruction in important school centers; technical articles on equipment and installation problems for schools and communities, etc. We shall print also special articles from time to time on the general field, such as a series of analytical articles on the history of projection; accounts of important achievements in the use of museums for visual instruction; visual activities in foreign countries, etc.

New departments will be started in September. The bibliography of the subject of visual education will be developed to include ultimately the entire literature in this field. Reviews of books and current articles will constitute another department. A question and answer service will be established as soon as the slow process of assembling a complete reference library is completed. The department of film information will be enlarged and critical reviews of important educational films, made by our staff, will be a feature of notable value.

As perhaps its greatest immediate service, VISUAL EDUCATION plans to circulate on an elaborate scale a questionnaire to American schools which should yield comprehensive and reliable data on the present situation of visual instruction in the United States and which will serve as a basis for planning a progressive program for further advance along these lines.

---

THE last copy of the last issue of VISUAL EDUCATION for the school year 1919-20 is in the mails. Our feeling is one of joy, not unmixed with relief. The June number now passes into the limbo of irrevocable things, nor have we the slightest wish to call back any part of it—except a small portion of page 39 (q. v.)

To all its friends, both within the educational ranks and outside, VISUAL EDUCATION extends its heartiest good wishes for the recreation season, and its sincerest thanks for their prompt and nation-wide cooperation given to its early endeavors. We are confident that this cooperation will increase steadily with the passing months and enable VISUAL EDUCATION to render a continually greater service to the cause of American progress along intellectual lines.

EDITOR.

# Visual Education in Detroit Schools

ONE year's work in visual education in fourteen schools in the city of Detroit has shown some positive results which increase our faith in the visual venture, and it has also raised some questions which we hope to see answered in a definite way in the near future. Conclusions in these matters seem obvious at first blush, and yet supporting facts are strangely missing.

Can a child learn better by seeing a thing than by hearing about it? Do pictures of industry with their pointed sequence and economy of action train the child in logical thought and orderly processes of organization? Does the actual seeing of a haloed, historical character destroy the visionary ideal? Is there an economy of time in the use of added visual material? Can we rationalize the "tinkling cymbal" of a great part of classroom routine? Is the charge that we are attempting to sugar-coat all education, eliminate all effort and serve or rather inoculate our children with wisdom justified by fact?

Many other questions confront all who seriously attempt such an abrupt tangent to the pedagogical wheel as the visualist must needs follow. We in Detroit want to know the answers to these questions and are attempting to find out by protracted experiment what they are. We are optimistic.

## *Rational Pedagogy*

Regarding the rationality of the screen as a desirable classroom adjunct, in the study of physical geography, for instance, what results are possible? We all know that we cannot take the class to the mountain, but with the aid of the silver screen we know that we can bring the mountain with all its snow-capped peaks, its dizzy heights, and astounding bigness into the classroom where the child can actually see it in progressive detail. So can the birds, bees, animals, flowers, insect life and the world of story and song be established in intimate associations with our children.

In the study of birds it is sound pedagogy to show on the screen a "still" of a bird, colored and in natural setting, permitting the child to study size, strength, proportion, color, nest, habitat, etc., and then to let him see the bird rise on wing, circle and finally settle on its nest, and at the same time have the victrola sound the bird's call. These things we believe even a child should know in their most obscure detail. What descriptions by the most eloquent spellbinders compare with the intimacy of these direct touches?

## *Organizing Material*

Films teach children to organize their statements effectively. One of the first recognized pedagogical principles is to attempt to teach our children to arrange what they say in as simple and direct a manner as is possible, and we all know the success of our efforts. An experiment in this work with third grade children conducted by Miss Carroll, auditorium teacher in the Stephens School of this city, gave these results. None of the children in a class of thirty who saw a picture dealing with the planting, cultivating, picking and care of oranges, mixed his topics, when telling about it. Each chose one or two phases of the



subject and told it with a clear understanding, stopping when the point was fully covered. New words from the screen were used naturally by the children. No questions were asked by teachers and no suggestions given. The presentation of the film required twelve minutes.

Following are five actual statements made by Third grade children after seeing a film on oranges:

1. *How They Fumigate the Trees:*

"First thing, they take a big white sheet over the trees. Then a gas wagon comes along and a little hose is put under the trees. They gas the trees forty-five minutes. The gas is so strong that a cat would die if it were in the tree. They fumigate the trees so as to get the bugs off so they don't eat the oranges."

2. *How They Water the Trees in the Dry Season:*

"The snow melts on the high mountains and comes through a dam. They close the gates in the dam and keep it there for a month. Then they let it go through two little ditches which look like wagon wheels going all over the orchard. There are little branches leading off of these. This is the way the orchard gets the water."

3. *Packing:*

"The oranges dump out and go down a big belt and then fall into the water. There are little brushes in there that keep going around and wash the oranges. Then they go up into another belt and keep going till they come to rollers which separate the oranges. When the oranges start down the incline the small ones fall down a trough and the big ones go further. Then they come to the ladies that pack them. They pack them so fast that you can hardly see what they are doing. They put them back on the roller which goes around a big turn and looks like trains. Then they come to a man who nails the box up and another who has little strips of tin and he puts these all around the box. Then it comes to the end of the roller and goes through a shoot and returns outside. Then they load them on a wagon and ship them to different places."

The story as told by two children in the Fifth Grade:

*Planting, Grafting and Transplanting.*

"The first thing we would do if we wanted to plant oranges would be—we would have some laths in the ground to plant the seed. The reason for these laths is this. We could not plant the seeds in a sunny place. If we should the seeds would be spoiled. The laths shade the seeds from being burned. They leave the seeds in the ground for one year. After two years have passed they take the trees which have grown quite high to another place which has more room. As soon as they get the tree into the ground they take a bud from a tree that produces excellent fruit and put it into a hole which has been cut into the small tree and set it in very carefully. After the bud has been put in they take a strip of cotton and bind it around the place where the tree has been cut. They don't cover the place where the bud is. If they did the tree would not be able to grow."

"After two weeks have passed they cut the top of the tree off. If they did not cut the top of the tree off all the strength that comes from the roots would go to the top of the tree. They want it to go to the place where the bud is. After they have cut the top of the tree off they paint it so it won't rot."

"When the tree is one year old they take it from the nursery to the regular orange grove. When they dig it up they have quite a space from the tree so they can have a ball of earth around it. The way they keep a ball of earth around the tree is—they have a sack and put the tree into it and tie the sack very tightly around with what they think is best."

"After they have been dug up with the ball of earth around the root they tie it in sacks. Then it is given an honest-to-goodness bath. It is borne away from the nursery to the regular orange grove where they put it in a hole with a lot of water and cover the roots."

*Irrigation:*

"People of California said that it was too dry to grow anything so they dug ditches for water to run down from the mountains to the groves. First it is in one big stream. It stops at the dam. In the dry season they open the dam once a month and let the water go down into the groves and water the trees. In the wet season it is opened every two months. "It branches off and goes between rows of trees."

*Slacker Trees:*

"A 'slacker tree' is a tree that doesn't bear as much fruit as the owners want it to. Then they make a hole in the bark and put a little bud in. This bud comes from the best producing orange tree in the grove. They bind it up not too tight. They cut off the top of the tree two weeks later. They paint the top to prevent it from decay. Cutting the top off and making a new tree from a slacker is better than making a new tree because it takes longer to grow a tree from a seed. Three years afterwards the slacker tree has been budded, it bears fruit."

*Fumigation:*

"They fumigate the trees because it would be a great loss if the insects ate all the leaves off and got into the buds. They take a little gas wagon and a man looks at the meter and sees if it has enough gas and then it goes to the next tree. The trees are covered with sheets. They are covered all the way down to the ground. They have a little hose and put it under the canvas and let the gas out. They gas a tree for forty-five minutes. Then they take the big sheet of canvas and put it on another tree."

*The Beauty of the Tree:*

"Now that we see the trees we think they are very beautiful. Some have buds on, others have blossoms and still others have oranges on. In California there are oranges picked every day. The ones that have blossoms on we may like the best. I would like the ones with the oranges on because I would eat those."

*Heaters:*

"On frosty nights the owners supply the men with little heaters. If they should not do that the trees would freeze and would be a severe loss to owners because they would not get any profit out of growing trees. They fix them one for each tree."

We believe that industrial films, beside giving an intimate knowledge of the work-a-day world, do teach concisely and without effort a very direct type of organization.

*Ideals*

Films do not spoil our idealistic conception of the historically great by showing that they were only men after all, and that the greatest thing about them was that as men they did the mighty feats recorded by history. Are you sorry that you learned about Santa Claus? Did the awakening rob Christmas of its emotional appeal to you, or did it open a door to greater understanding and simply close the story book "twist" as a pleasant memory? Does it harm your conception of Washington or Lincoln to see them portrayed? They were men. Should we think of them as such or can they do us the greatest good by being relegated to a spiritual world never spoiled by the muck of our body politic?

*Time Saved*

How much time can we save by letting the pictures do their work? The story of oranges, presented in 17  $\frac{2}{3}$  minutes covering agricultural, horticultural, and marketing problems in detail, when compared with the best thirty minute oral presentation we could secure, showed for groups of mentally equal children the following average percents per class.\*

*Two Methods*

<b>Oral—30 min.</b>		<b>Visual—17 <math>\frac{2}{3}</math> min.</b>	
Percent	No. of children		No. of children
55	2		0
60	3		3
65	4		3
70	4		1
75	7		1
80	1		5
85	2		8
90	0		2
Oral average, 70.8%		Visual average, 78%	
24 children		24 children	

*Misconceptions*

How do pictures assist in rationalizing our class work? When we discuss volcanoes with our little fifth graders, how many distinct impressions do we create? A psychologist would undoubtedly say, as many impressions as children in the class, and these impressions vary from a tiny hill emitting smoke to mountainous giants of impossible size.

If this is true of volcanoes, is it not equally true of all subjects not within the reach of the classroom, and what a small percent is actually brought into the class room. What a correspondingly large amount of indefinite impressions then must we by virtue of our oral limits be daily creating in our schools! The motion picture not only shows the child the volcano, but takes him up its side to the very edge of the mighty crater, where he sees the foaming, flashing lava, and it even lets him descend into the jagged pit where the stream and fumes are thrown into his very face. After this experience do we need to tell him what a volcano is and what it does? On the contrary, he has an impression which is decidedly fast, accurate and real, and he is ready now to go into a rational study of the causes and life history of such a mountain.

*Study*

An English gentleman, versed in Oxford humanities, once caustically said that all the character which civilization has claimed has come from hard study, and that any plan which attempts to short-cut the arduous path to learning

\*NOTE: These papers which did not have the names of the children nor the method of their instruction attached were given to five different teachers for grading, none of whom knew how the others had marked them. There was no place in the score sheet which showed a negative tendency on the part of the pictures. Each mark showed an equivalent to or an improvement over the oral method. The papers were marked on content and on organization—two separate marks. The per cents listed above are the grand average of both the content and organization marks. Note that the time saved by the visual method is nearly 50%. At the same time the children showed an increased score of 7.2%. The marks of these children in their other work are, on an average, equal, which shows them to be hypothetically mentally equal groups.

with its attendant discipline is pernicious. Were we to stop where his ancestral boundary limited his fathers' studies, we, too, would say, "slow it up; make him work for the little he is getting or he won't appreciate it." However, how much more does a boy of today know at the age of ten than his father knew at that age? What has happened to the peaks attained by our fathers? Should we stress the method of attainment as the Englishman would direct, or the accomplishment of a goal with method serving a well-suited purpose? Is it discipline or achievement, study for study's sake, or study to live? We do not believe that the mechanical accompaniment to study, reading or writing words, inspecting things or repeating thoughts, is any part of study itself; but that the application of these impressions, however gained, to a life purpose, is study in its highest form.

### *Detroit Plan of Operation*

Our plan of operation is very simple. We show on Monday, Wednesday and Friday to fourteen schools, which are grouped in three circuits. Tuesday and Thursday are delivery days for the transfer of machines and films. We are using portable projectors. Pictures are shown in the auditoriums and classrooms. Teachers have proven themselves to be satisfactory operators of the machines. We show to from seven to ten thousand children a week at a per capita cost of about eight mills.

This year our films have all been rented. However, we hope to build up a library which will suit our own needs and which will make it possible for us to put films in any classroom in Detroit at the time they are needed. This can only be done through the establishment of our library. Incidentally this will reduce maintenance cost to a possible two or three mills per capita.

We have confined our bookings strictly to educational material. A comedy was used once as a "filler," but was rejected by the children, who said they wanted something better—an educational picture. We have shown most of the available literature stories, such as "Puss-in-Boots," "Little Red Riding Hood," "Hop O' My Thumb," "Aladdin," "Sleeping Beauty," "Cinderella," "Goldilocks," "Children's Hour," "The Brook," and "Treasure Island." Travels have taken us into nearly every country and shown us bits of native industry, habits, customs, etc., but the greatest part of our films have dealt with industry, perhaps because of their greater availability.

One child in the eighth grade was asked if she thought the "movies" in her school helped her and the story she handed in the next day was as follows:

### *Moving Pictures at School*

"We have moving pictures every Thursday from 12:30 to 1:30 o'clock at our school. We have them to help us with our history and other studies. The smaller children do not realize their value. They think moving pictures are only for pleasure.

"The most interesting picture I saw was how sugar was made. Of course, I knew sugar came from sugar cane, but after I saw the picture I felt so sure I knew the history of sugar that I was positive I could pass an examination on it.

"It did help me because that evening at the supper table my cousin who

had supper with me asked how sugar was made, and I told her. She was actually surprised that I knew exactly how it was made. My parents listened with interest as I was telling the story and were quite surprised, too, at the way I could explain.

"The picture of sugar did help me in my work because a short time afterwards I was to write a composition on sugar and I had no trouble in writing it after seeing the picture.

"I would not like to go to a school that has no moving pictures because I think they give you both pleasure and education.

"I think the pictures they show at the school are just what we ought to see. I used to like drama pictures but I am getting to like educational pictures better.

"I do not remember of anybody expressing bad opinions of the movies, but I have heard some children say they think it is just lovely that the Board of Education allows pictures to be shown at school, and that they think it is a good rest for the children after working in their rooms."

Our plan for next year will be to experiment with pictures on different phases of a definite topic over an average of three weeks, with an idea to assist in correlating the various school studies. For instance, we may spend the month of October in the study of Holland. The films would roughly cover agriculture and general industries, architecture, dress, games, customs, and general folk lore. This is merely an experiment to see if an economy of time and a greater effectiveness in the use of pictures can thus be secured.

J. H. WILSON,

*Director of Visual Education,  
Detroit Public Schools, Detroit, Michigan.*

## Program of the N. E. A. Convention

Annual Meeting of the NATIONAL EDUCATION ASSOCIATION, Salt Lake City, Utah.

(All sessions will be held in the Tabernacle)

**Monday Evening, July 5, 1920, 7:30 o'clock**

E. A. Smith, Superintendent of Schools, Salt Lake City, Utah, introduces George D. Strayer, Professor Educational Administration, Teachers College, Columbia University, New York, N. Y.

### ADDRESSES OF WELCOME

G. N. Childs, State Superintendent of Public Instruction, Salt Lake City, Utah.  
Simon Bramberger, Governor of State of Utah, Salt Lake City, Utah.

### RESPONSE

A. E. Winship, Editor "Journal of Education," Boston, Mass.

### TROMBONE SOLO

Alfred Roncovieri, Superintendent of Schools, San Francisco, Calif.

### PRESIDENT'S ADDRESS

Josephine Corliss Preston, State Superintendent of Public Instruction, Olympia, Wash.

### REPORT OF THE COUNCIL OF EDUCATION

Homer H. Seerley, President Iowa State Teachers College, Cedar Falls, Iowa.

(Program continued on page 17)



# The Regional Treatment of Geography

IN two previous articles on the teaching of geography published in this magazine<sup>1</sup> I have emphasized the importance of very simple studies in home geography. I believe in such work for little children as an introduction to the study of this subject. Ideally, a parent or teacher would like to travel with a child of school age and take him to one country after another. On such journeys the child would come, in a most natural way, to know the children of other lands. He should climb the mountains, traverse the lowland fields, and see the people at work. He should see the great seaports. He should come to know the differences in climate in the various parts of the world. The actual experience of living through a rainy season in the Philippine Islands, of noting the change in the monsoon circulation in India, of traveling across a great desert, would fix indelibly in his mind certain images which should be of permanent value to him in the study of geography.

Imaginary journeys must accomplish as far as possible the same ends. The child must get pictures of other lands and other people impressed upon his mind. He must come to know of the changes in the lengths of day and night in the Arctic and Antarctic regions, of the constancy in the twelve hours of day and of night at the equator, of the changes of the winds from day to night along the coast, and of numerous other natural phenomena with which he has not had actual personal experience. This training of the imagination is exceedingly valuable and makes up in part for the lack of that vividness which personal experiences in actual travel would bring to him. As educators we must aim to develop and preserve the child's imagination as he grows older.

I also emphasized the importance of vividly picturing, perhaps dramatizing, the life in each country which is studied in the first lessons in geography. The use of pictures, maps, charts, museum materials, all fit into such a scheme of instruction. There is no possible way of instructing children so easily and so accurately as through the eye. I would urge that in these early stages of instruction the child be encouraged to make picture collections of his own. As soon as he is able to write he should prepare little stories about what he sees in the picture. Perhaps he will raise questions about the scene or the objects shown in the view. Such questions should serve as the basis for wholesome discussions. The picture collections should grow in size just as the child's experiences should increase through travel or through imaginary journeys.

This beginning work, which seems, at first thought, to be without organization, is perfectly wholesome during the early stages in the teaching of geography. The little child in the third, fourth, and possibly in the fifth grade of school is not greatly concerned with the organization of material or with the explanation of all that he is learning.

There comes, however, in the mental development of each normal individual, the stage when the study of geography must be more definitely organized. This has been generally recognized, and we have commonly taken a continent or a political unit as a basis for study.

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1. *Visual Education*, January 1920 and May 1920.

These units have some virtue in them, but a new unit which can now be defined as a "natural region" offers still greater advantages to the teacher of geography. A natural region is a portion of the earth's surface throughout which the geographic conditions which influence life do not differ greatly. For example, the Central Plains of the United States serve as a convenient natural region in the study of human geography. Within that region, bounded on the east by the Appalachian Plateau and on the west by the great semiarid plains, there are rich soils, an amount of rainfall adequate for agriculture, a long growing season, excellent waterways and water power, and wonderful resources in coal, oil, gas, lead, zinc and some other minerals. Near that natural region, in the Lake Superior district, there are vast supplies of iron, copper and timber. The physical features, the climate and the natural resources, which are the three great outstanding elements in the geography of any natural region, are quickly presented and easily understood.

The natural region should be looked upon as a habitat where scenes in human life are being enacted. Certain people enter upon the stage. They may have their own peculiarities, but the geography of the region will almost certainly determine their occupations. We are assuming that they are intelligent, civilized beings. The drama that is enacted cannot be understood unless the influence of great geographic controls is understood.

Suppose we turn to the Black Hills of South Dakota. This is a clearly defined natural region which has a distinct control over the life and activities of the people who live there. The hills or low mountains rise abruptly from the bordering plains. The rocks are so exposed that man easily discovered great mineral wealth in them. Their elevation causes a greater rainfall than falls on the neighboring plains, and the hills are therefore well watered. Mining, lumbering, and some agriculture are carried on, while on the plains grazing is the chief occupation, and agriculture can be pursued only where irrigation is possible.

The Rocky Mountains make another very natural region where the physical features, the climate, and the natural resources determine the occupations of the people and the economic conditions in that part of the country.

Numerous other examples could be given. The valley of California stands out conspicuously as a small natural region. The Plain of Hungary, surrounded by mountains, the valley of the Po, the highlands of Switzerland, the desert of Arabia, or the desert of Iran, all yield to this same treatment and serve as units in the study of geography.

The aim to understand geography now comes to the front. Pure memorizing of facts has resulted in a very inadequate training in geography. Facts that are unassociated in the mind fail to linger there. They are meaningless. Such teaching results in no mental training, no growth or acquisition of power on the part of the student. Geography offers a remarkable opportunity to the teacher to train young people, through the problem method of instruction, to think, to understand existing conditions, and to sympathize with the various races of man. This should in the end lead them to become better citizens, not only of the United States, but of the world.

To the regional treatment of geography, therefore, we may look for a more

complete understanding of the subject, for a more thorough knowledge of facts, and for a more adequate mental training. Many teachers have already adopted the natural region as the unit of study. All good teachers use the problem method of instruction, and if these plans are carried out, the natural enthusiasm which a child brings to the study of geography will be maintained. That enthusiasm will be cultivated, the imagination will be trained, and geography will become one of the greatest forces in American education.

WALLACE W. ATWOOD,  
*Harvard University.*

## N. E. A. Program (Continued from page 14)

**Tuesday Afternoon, July 6, 1920, 2:00 o'clock**

### THE NATIONAL EDUCATION ASSOCIATION AS THE INTERPRETATION OF AMERICAN CIVILIZATION

Mary C. C. Bradford, State Superintendent of Public Instruction, Denver, Colo.

### REPORT OF THE COMMISSION ON THE EMERGENCY IN EDUCATION

George D. Strayer, Professor Educational Administration, Teachers College, Columbia University, New York, N. Y.

### THE RECOGNITION OF EDUCATION AS RELATED TO OUR NATIONAL LIFE

Olive Jones, Principal Public School No. 120, New York, N. Y.

Will C. Wood, State Superintendent Public Instruction, Sacramento, Calif.

**Tuesday Evening, July 6, 1920, 7:30 o'clock**

### CIVIC EDUCATION

#### THE PROBLEMS OF AMERICANIZATION

Jessie Burrall, Chief of School Service, National Geographic Society, Washington, D. C.

#### HOW WE ARE TEACHING CITIZENSHIP IN OUR SCHOOLS (8 minutes)

William J. Guitteau, Superintendent of Schools, Toledo, Ohio.

F. B. Cooper, Superintendent of Schools, Seattle, Wash.

Frank Webster, Assistant Superintendent of Schools, Minneapolis, Minn.

L. P. Benezet, Superintendent of Schools, Evansville, Ind.

Susan Dorsey, Superintendent of Schools, Los Angeles, Calif.

#### WHAT THE WAR CONTRIBUTED TOWARDS TEACHING CITIZENSHIP

Guy Potter Benton, Vice President Sargent Service Corporation, New York, N. Y.

**Wednesday Afternoon, July 7, 1920, 2:00 o'clock**

### INDUSTRIAL EDUCATION

#### THE OPPORTUNITY SCHOOL

#### ARE WE GETTING PROPER RETURNS FROM INDUSTRIAL EDUCATION IN OUR PUBLIC SCHOOLS

H. S. Weet, Superintendent of Schools, Rochester, N. Y.

C. A. Prosser, Principal Dunwoody School, Minneapolis, Minn.

E. A. Bryan, Commissioner of Education, Boise, Idaho.

#### TRANSITION OF THE PUPIL FROM THE SCHOOL TO INDUSTRY

Arthur Holder, Federal Board of Education, Washington, D. C.

(Program continued on page 32)

# "Motion Pictures as an Educational Agency"

## A REVIEW

THE purpose of this article is to evaluate the experiment reported by Mr. John V. Lacy in his article, "Motion Pictures as an Educational Agency," originally appearing in the *Teachers' College Record* for November 1919, and reprinted in this issue\* of VISUAL EDUCATION.

It should be said at the outset that Mr. Lacy deserves great credit for his efforts to subject this important problem to experimental treatment. His experiments were among the pioneer efforts in this field. The whole tone of his discussion shows a desire to be fair and conservative. He realizes, too, that this is only one of a series of experiments which must be conducted before we can arrive at a set judgment regarding the value of motion pictures in the schools.

It should be kept in mind, however, that his whole experiment deals with narrative material and that his conclusions reached, if sound, must be taken to apply primarily to this type of material. Whether or not similar results would be obtained by using this method with other material remains to be proved. There are many reasons for thinking that different results might be expected from experiments in such subjects as Geography, History and Science. These subjects are of a more factual nature and can be tested more rigorously. Moreover, the "set" of the child mind in viewing pictures dealing with such content subject matter is one of inquiry and learning. On the contrary, in reading literature the child can hardly be said to have a learning attitude. He reads primarily for the enjoyment of the story. Many of the facts in the story are arbitrary and do not appeal to the reader as something to be remembered.

Any experiment of a pedagogical nature is improved by keeping in mind the objectives which the school seeks to reach by teaching the subject matter which is used in the experiment. In the case of literary material the primary purpose, in the judgment of the writer, is the cultivation of a taste for the specific selection used, and for literature in general. There are several questions which might be asked in any attempt to measure the effectiveness of motion pictures as a means of cultivating a taste for good literature. Among these are:

1. If a child sees a moving picture of a story or a play which he has not read, may we expect the motion picture to act as an incentive to reading the story?
2. In case he has already read the story, will the motion picture add to his appreciation or tend to cause him to reread the story?
3. Can the human experiences given in the story be taught as well by the motion pictures as through the printed page?
4. Will the introduction of the motion pictures tend to increase the amount or quality of literature read?

Mr. Lacy's experiment is not planned to throw light, specifically, on these problems. No doubt he would say, and perhaps justly, that he had to use some material for his experiment and that literary material happened to be convenient. It must be clear, however, that the problem, the method, the testing, and perhaps

\*See page 33.

the conclusions would have been quite different had he used the government film, which was prepared to teach soldiers how to read a topographical map.

In the method of his experiment the chief variables to be taken into account are the time given to each exercise, the subjects to which the exercises were assigned, the method of presentation used, and the method of testing. The experimenter should plan to equate all factors except the one being investigated, and should in the interest of clearness report the precautions taken to secure such a limitation of variables. In number and distribution of subjects, in the arrangement of sections, and in the personnel of the teaching aids Mr. Lacy seems to have planned very well, but it is not so clear that he sufficiently equated the time for presentation for each of the types of exercises, or that his method of testing is of a sort to bring out the true effect of each mode of learning.

Whether or not the presentation by story, by reading, and by moving pictures, extended over the same number of minutes is not clear from the description of the experiment. If, as Mr. Lacy states, the story-teller in narrating the story gave "a practically verbatim" reproduction of the text read by the reading section the time of presentation could hardly have been the same. The experiment gives no indication of the time used for the presentation by moving pictures. Neither is it clear how inequalities of reading rate were taken care of in the reading group, nor is it possible to tell whether or not pupils, who had furnished a single reading, were allowed to reread. It would, of course, have been possible to make the time of each method of presentation equal, but not for the presentation of identical data. If the time was not equal, then the conclusions are valid, only when amended to compare the effect of a *single presentation, regardless of the time taken for such a presentation*. Suppose, for example, that the time given to each presentation was as follows: motion pictures, twenty minutes; reading, thirty minutes, and oral presentation, forty minutes. The conclusions based upon the evidences offered by Mr. Lacy would be quite different.

Important as are these possible differences in the time given to each type of presentation, they are not so significant in evaluating Mr. Lacy's experiment as the effect of the type of test used. It is, of course, very difficult to arrange a set of questions which test with equal rigor what one has obtained from seeing a moving picture representing a certain story, as compared with what is obtained by reading the story itself. Assuming that the moving pictures have been accurately made and that the legends which accompany the pictures are ample and in harmony with the original text, it must be clear that one could ask a great number of questions which pupils who had not seen the picture could not answer. In a similar way, unless the pictures and the legend present all the data given in the story itself, it would be possible to ask the questions on the original material which could not be answered by those who had seen the picture. Mr. Lacy states that no data were called for in the questions that were not supplied in each form of presentation. Unfortunately, he does not give the questions, so that we are not able to judge their fairness and adequacy. Assuming, however, that precaution was taken to ask questions the answers to which could have been found in the picture, in the text and in the story, it must still be clear that the very



fact that the test was a language test rendered it at once unsuited to be the sole test of the efficiency of these three modes of presentation. On the one hand, experiments have shown quite clearly that individuals, after reading a paragraph or longer selection, may answer questions asked upon it quite glibly and with apparent correctness, and yet be shown to have very little real understanding of the selection. On the other hand, it is quite clear that many individuals who have a thorough-going understanding of a given situation through having experienced it may yet be unable to answer questions on the experience in a satisfactory manner. This is particularly true in case the questions require generalizations. The thing to remember is the inadequacy of language to assure accurate comprehension except in case the individual has already had the essential experiences to the recall of which the language merely acts as a stimulus. This is true whether the language refers to the odor of a salt marsh, the howl of the coyote, the tug of a trout at the end of a fishing rod, or the appearance of the country in which the scene of "*The Hoosier Schoolmaster*" is laid. It is within the field of visual concreteness that moving pictures might be expected to make an important contribution.

It is very common for children to be able to answer questions on a paragraph or a longer selection quite accurately, when by a more rigorous test they would be shown to have wholly erroneous and inadequate ideas of the meaning of the text. This has been shown quite clearly in the experiments which have been conducted in reading in the University of Iowa during the past three years. Two of these experiments will suffice to illustrate this deficiency.

The following exercise was given along with a number of others to children in the third, fourth, fifth and sixth grade classes, and also to college students in the regular session 1917-18 and in the summer session.

"I want to see how carefully you can read a short paragraph. After you have read it, you will be asked to answer some questions about it. In answering these questions there are three things you should be sure to remember. They are:

1. Give just the information needed to answer each question, but make sure that the answer you give is to be found in the paragraph.
2. If any question is asked for which you think there is no answer given in the paragraph, write on your paper, "The paragraph does not tell."
3. You may read the paragraph as often as you wish to make sure that your answers are correct.

Now that you know exactly what to do, read the following paragraph and answer the questions just as you have been told, remembering that you may have all the time that you need.

#### PIONEER FURNITURE

The big fireplace would be among the first things to attract attention. Above it, resting on a shelf or mantel, would be seen a candle, a clock and one of the housewife's most beautiful plates. Within the fireplace, fastened at one side, would be seen the crane upon which hang the kettles over the blazing fire.

Sketch the picture you see when reading this paragraph."

In carrying out the request to sketch the picture suggested by the paragraph it was not expected that the students would produce any finished drawing. After the drawings had been made, they were scored as to their accuracy. One part of the drawing test will illustrate the failure of the students to reproduce accurately the meaning of such a paragraph. One-half of a class of 24 children, in drawing the clock, drew a modern alarm clock. Only one child sketched a clock that had any resemblance to any of the common forms of colonial clocks. Two pupils drew no clock at all on the mantel.

It is quite clear that no amount of reading will give a child a clear idea of what a pioneer clock looks like, and yet, if the test of this paragraph had been the ability to answer the sort of questions ordinarily asked on material which has been read, these children no doubt would have made a very good score. Even in the case of college graduates, a large proportion drew alarm clocks to represent pioneer clocks. These adults, after having read the paragraph through once, said that they understood the paragraph and were only made aware of the inaccuracy of their comprehension by the drawing test. It may, of course, be argued that it is not important to know what a pioneer clock was like. Whether or not the information is important is, however, beside the point of the experiment, which sought to discover how accurately a paragraph is comprehended through reading. A very great proportion of the material found in text books in the elementary schools is less concrete and more difficult than this paragraph.

Similar results are shown in a companion experiment conducted by Dr. Harry Greene and recently repeated. The exercise was designed to give some data on the ability of pupils to read a selection from geography. The test follows:

"I want to see how carefully you can read a short paragraph. After you have read it you will be asked to answer some questions about it. In answering these questions there are three things you should be sure to remember. They are:

1. Give just the information needed to answer each question, but make sure that the answer you give is to be found in the paragraph.
2. If any question is asked for which you think there is no answer given in the paragraph write on your paper, "The paragraph does not tell."
3. You may read the paragraph as often as you wish to make sure that your answers are correct.

Now that you know exactly what to do, read the following paragraph and answer the questions just as you have been told, remembering that you may have all the time that you need.

#### WHEAT BELTS

The chief wheat belts extend through the valleys of the Missouri, the Ohio, and the upper Mississippi. Of all the states in this region Minnesota raises the most wheat. There is another belt along the Pacific coast. The present center of wheat production is about 100 miles west of Des Moines, Iowa; since 1850 it has moved westward nearly seven hundred miles, and northward about one hundred miles.

#### ANSWER THESE QUESTIONS

1. Mark on the accompanying map the chief wheat belts of the United States by using a large letter "W" in the proper places.

2. Place a number one (1) in the state raising the most wheat, on the map.
3. Place a small cross (x) where the present center of wheat production is located.
4. Show by an arrow (→) the direction on the map in which the center of wheat production has moved 700 miles since 1850.
5. Show by a star (\*) on the map about where the center of wheat production previous to 1850 was located."

In scoring the answers Dr. Greene arranged a scale of values which would give credit to even slight approximations to the correct answer. The scale of values follows:

#### KEY FOR SCORING EXPOSITION READING TEST WITH MAP

##### Question I

- Score 3: "W's" marking the valleys of the Mississippi, Missouri and Ohio rivers, and Pacific coast.  
 Score 2: "W's" marking valleys of the Mississippi, Missouri and Ohio.  
 Score 1: "W" in one of the three valleys.  
 Score 0: No "W" correctly placed.

##### Question II

- Score 3: (1) in the state of Minnesota.

##### Question III

- Score 3: (x) placed in Western Iowa.  
 Score 2: (x) placed in Nebraska.  
 Score 1: (x) placed in South Dakota or Kansas or farther west.  
 Score 0: No (x) correctly placed, or "paragraph does not tell."

##### Question IV

- Score 3: An arrow from central Ohio or any place in Ohio pointing toward central Iowa.  
 Score 2: An arrow to the east of Iowa pointing westward.  
 Score 1: An arrow pointing westward.  
 Score 0: No arrow, or arrow not pointing westward or northwest, or "paragraph does not tell."

##### Question V

- Score 3: A star (\*) in Ohio.  
 Score 2: A star in Illinois, Indiana, Pennsylvania or Kentucky.  
 Score 1: A star in any place to the east of the present center (100 miles west of Des Moines).

On the basis of this scale of values the following scores were given. For question 1: Grade four made a score which was 39.1% of the total possible score; Grade five, a score which was 57.5% of the possible score; Grade six made a score which was 71.3% of the possible score. The percentage of possible scores for the other questions follows. For question II: Grade four, 29%; grade five, 72%; grade six, 69.7%. For question III: Grade four, 36.2%; grade five, 72.7%; grade six, 71.3%. For question IV: Grade four, 18.8%; grade five, 30.3%; grade six, 25.8%. For question V: Grade four, 24.7%; grade five, 18.2%; grade six, 4.6%. It is interesting that in answering the fifth question no pupil in any of these three grades gave an answer which could be regarded as correct.

No doubt this exercise does involve some knowledge of the map. This,

however, was largely offset by indicating on the map most of the regions referred to in the text.

As in the exercise on pioneer furniture the result showed quite clearly that in testing by such an exercise pupils do not show an accurate comprehension of geographical material which they read. These data seem to show quite clearly, first, that if we expect children to get an accurate comprehension of the facts in such subjects as history and geography, we must make a very liberal use of devices which assure concreteness; and second, that in comparing the results of reading with some other form of presentation, it is very important to guarantee that the test given does measure in an accurate way the comprehension of the pupil. Good teachers have long used pictures and models to assist in making their teaching concrete. More recently a development of project teaching (using "project" in the sense of an exercise taken in its natural setting and involving the use of concrete material and particularly in a constructive way), has done much to assure accurate comprehension. For example, the child who has made candles, using pioneer candle molds, has a far more accurate understanding of how candles were made than he ever could have as a result of reading about the process.

The latest attempt to add to the reality of teaching and to guarantee a highly concrete and highly accurate understanding of such subjects as history, geography and science, is to be found in the use of moving pictures. The work at present is in its pioneer stages. For the most part, those who are interested have shown themselves quite willing to submit the efficiency of the moving pictures to the most careful inquiry. The most promising method of approach to the various problems involved in inquiry seems to the writer to consist first, in showing the limitations of presenting data orally or through reading; and second, in evaluating the various materials which may be proposed to supplement these language presentations. Among the devices which must be studied are; the picture, the graph, the stereoscope, the lantern slide, the project, the museum, the excursion, and the moving picture. Because of the serious commercial problems involved in the manufacture, introduction and distribution of moving pictures it is particularly desirable that we continue the experiments which Mr. Lacy and others have begun. Many serious mistakes and the consequent loss in money and in opportunity, can be avoided only in this way.

ERNEST HORN,

*Professor of Education, State University of Iowa,  
Iowa City, Iowa.*

# Our School Children and the Movies

THE Commission upon Moving Pictures Censorship appointed September 23, 1919, under resolution of the Judiciary Committee of the City Council of the City of Chicago, has been conducting hearings and investigations, and in a report of its findings says:

"The motion picture industry, in the few years of its existence as a popular amusement and practical business, has outstripped every other industry or enterprise. It is more far-reaching, and has a greater influence and is of greater importance to all people than any of the other industries of life because of the vast numbers of people coming in direct contact with it, and in the amount and extent of the daily turnover of money in its production.

"The Cinema, as it is known in Europe, or the Motion Pictures, as it is called in this country, has a greater bearing and more direct effect upon and controlling influence on the people as a whole—men, women and children alike—than does the home, the school, the church, or than do the physical things necessary to social community existence, such as lighting, health regulations, liquor traffic, transportation, etc., or even "quality of municipal administration of government."

"The Motion Pictures relate to and directly bear upon and control to an unbelievable extent, the trend of the mind and the education and morals of every man, woman and child in the community."

The essential correctness of the foregoing statements is conceded by all. It is impossible to over-rate the power and influence upon our national life which is being exercised by motion pictures today. They are a part of the life of the people. The rich and the poor, the educated and the illiterate, of all ages and all classes, no matter what language they speak or understand, find amusement and recreation in them. The motion picture speaks to the mind in a universal language. A picture can be absolutely absorbed merely by seeing it. It is probably the easiest way to receive impressions that the world has yet discovered. Mr. Oberhoetzer, Secretary of the State Board of Censorship of Pennsylvania, says: "One can read and get an impression if he is industrious enough to do so, but when he views a motion picture he gets an impression in spite of himself. The influence of a motion picture is obviously much greater than the influence of a book. It is more graphic and is an influence which fixes the mind of a person who does not read or who cannot read and he absorbs it anyhow."

The extent of the patronage of moving picture theaters is astonishing. It is estimated that the average weekly attendance in the United States is fifty millions. The paid admissions in Chicago alone are about three millions per week. On account of its far reaching and powerful influence thru its direct contact with vast numbers of people, the motion picture industry possesses the power to do either the greatest good for the community or the greatest harm. This is realized now more than ever before. Nearly every organization which is interested in child welfare work and community betterment has a Better Films, or Motion Picture Committee. This is especially true of women's clubs and parent-teacher associations.



The first thing needed is reliable information regarding the actual situation. The parent-teacher associations are interested primarily in the extent to which school children attend the motion picture theaters, the kinds of pictures they like and the effects these pictures have upon them.

During the latter part of March, in order to determine the real conditions in Chicago, I sent questionnaires to six schools located in representative sections of the city, including two in Hyde Park, one in Woodlawn, one in Englewood, one in an Italian district, and one in a western suburb. Thru the splendid co-operation of principals and teachers, all pupils in the grades from fourth to eighth inclusive wrote the answers to five questions as an English lesson, often elaborating upon their replies in true childish fashion.

I read with much interest the papers from more than three thousand pupils, and questions 1 and 2 (1. How many times a week do you go to the movies? 2. On which days of the week do you usually go?) revealed the following facts:

With several hundred children attendance at the movies is a fixed habit, as their replies indicate. One said "I always go every Friday night, as there is no school the next day." Others stated their reasons, almost apologetically, "I go nine times a week, every night and also in the afternoon on Saturday and Sunday, because my mother plays the piano at the show." "I always go two times a week except in Lent. I never go in Lent." Etc. Friday, Saturday or Sunday means attendance at the movies as definitely as Sunday used to mean attendance at Sunday School.

The results on attendance for the 3,000 pupils who answered the questionnaire were as follows:

	44%	attend the movies once a week
	28%	" " " twice "
	10%	" " " three times a week
	3%	" " " four " " "
	1%	" " " five " " "
3/5 of	1%	" " " six " " "
2/5 of	1%	" " " seven or more times a week
	3%	do not go at all
	10%	go only occasionally.

This indicates that for the 2,610 pupils who attend regularly it requires 4,602 tickets per week, not including those whose attendance is irregular. The average cost of a ticket is at least 20 cents, or a weekly total for these six schools of \$920. The total for the year is the astonishing amount of over \$46,000.

If question five were given alone, accurate information could not be secured from the children, and therefore three and four were given to serve as a check on five. These three questions were:

3. Name the best picture you have ever seen.
4. Name five others which you liked very much.
5. What kind of pictures do you prefer?

As an illustration, one pupil gave Charlie Chaplin in "Shoulder Arms" as the best picture he had ever seen and named four comedies and one serial as favorites, then answered five by saying "I like educational pictures best, espe-

cially those with Charlie Chaplin." With this reply to five, given without three and four, his preference might have been classified under "educational," but with the other two questions serving as a check on five, it was very evident his preference was comedy.

In order to simplify the classification of pictures named, the following outline was used in discussing the replies:

*Drama*—All best grade films, educational, dramas, Paramount travel, war, industrial, fairy stories, books, as "Little Women," "The Blue Bird," etc.

*Comedy*—Cartoons, animated funnies, best grade of comedy.

*Serial and Western*—Mystery and adventure, cowboy stories, rough western comedy and shooting.

The classification of the kind of picture preferred has been carefully made after taking into consideration the picture named as best and the five favorites, the count being given to the majority.

52%	indicated	a	preference	for	drama
20%	"	"	"	"	comedy
20%	"	"	"	"	serials and western

It is an interesting fact that the preferences are quite different in the school in the Italian district from those in the other districts. A much lower grade of pictures are shown there, the motion picture theaters are less numerous, and the standards of living are quite different from those of the better residential neighborhoods. Shooting and fighting to them is indicative of brave and courageous men.

For 714 pupils in two schools of the two types the classification of picture preference follows:

	<i>Comedy</i>	<i>Drama</i>	<i>Western and Serial</i>
South Side School .....	187	415	112
Tenement School .....	119	163	432

The serials are nothing more nor less than the old dime novel pictured and given in the form of a continued story.

It is also an interesting fact that while, in the school in the Italian district, there are 245 pupils in the fourth grade and 218 pupils in the fifth grade, there are only 116 in the sixth grade, 79 in the seventh, and 73 in the eighth. Here is a definite example of the decrease in attendance at school above the fifth grade in the tenement district. The following comparison in school attendance is made between schools of approximately the same size.

	<i>Total No.</i>	<i>4th</i>	<i>5th</i>	<i>6th</i>	<i>7th</i>	<i>8th</i>
	<i>pupils</i>					
South Side .....	719	108	163	158	155	135
Tenement District .....	731	245	218	116	79	73

Returning to question five, here are a few replies as given by the children: "The kinds of picture I like best are those that scare you." "Good sensible pictures where people are very poor and grow rich." "Lots of pep and exciting." "Monkeys and Fatty Arbuckle; they make fun." "Guns and police wagons, because people are all sad and excited." "Lots of fighting when men are brave and fight for a girl." "I never go but the best picture I ever saw was flowers.

I like flowers, cats, dogs and lakes, but I like flowers best of all." "Mystery, but not too deep." "Educational pictures like the Lincoln Highwayman." "I like a picture that is  $\frac{2}{3}$  humorous and  $\frac{1}{3}$  serious." (Evidently beginning study of fractions.) "I like to see how things are made; pictures of fisheries, etc., and good western scenery." "Good books like Pollyanna." "Travels with Burton Holmes." "I never go except when mother knows it is a good show and she goes with me." "I never went. I have nothing to tell you because I never went." Etc.

In order to determine the actual effect of the movies on the school work of the pupils the teachers were asked to indicate by numbers (not names) the five best pupils in scholarship and deportment in each room, also the five poorest. The data from these pupils were compiled separately and for the six schools the attendance at the movies of the best pupils included 275 pupils and they require 393 tickets per week, while the 275 poorest require 503 tickets weekly. Again there is a great difference in the various districts and you can draw your own conclusions from the following table:

TABLE OF 50 BEST PUPILS AND 50 POOREST FROM EACH OF FOUR SCHOOLS  
(10 of each from each grade)

SCHOOL	WEEKLY ATTENDANCE									
	A		B		C		D		TOTAL	
	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest
No. of pupils..	50	50	50	50	50	50	50	50	200	200
One .....	28	24	14	16	26	20	18	14	86	74
Two .....	11	17	19	14	12	18	16	18	58	67
Three ....	3	1	6	7	5	7	0	7	14	22
Four .....	0	0	0	7	1	0	0	3	1	10
Five .....	0	1	0	1	1	1	0	1	1	4
Six .....	0	0	1	1	0	0	0	1	1	2
Seven ....	0	0	0	0	1	0	0	0	1	0
None .....	0	0	0	0	1	3	0	0	1	3
Occasionally ..	8	5	9	4	3	1	16	6	36	16
No. of tickets per week..	59	69	75	103	81	82	50	94	265	348

KIND OF PICTURE PREFERRED

Comedy .....	10	15	8	13	6	6	8	10	32	44
Drama .....	37	29	41	27	14	6	31	20	123	82
Serial and Western ..	3	6	1	10	29	35	11	20	44	71

School A represents families of many nationalities in moderate circumstances.

School B represents a fair average.

School C tenement district where movie theaters are very poor and not numerous.

School D is in one of the best residential sections where theaters are good and very numerous.

ESTELLA L. MOULTON,  
Chairman Better Films Committee,  
Illinois Council of Parent-Teacher Association.

# An Inexpensive Model of a Medieval Castle

IT IS easy nowadays for the teacher with funds at his disposal to secure good models of many objects which will conduce to the better appreciation of the life, customs and environment of the historic peoples his pupils study. Not all teachers have such a fund, but where there is a manual-training department in the school it is quite feasible to have a number of good models made at practically no expense. Even the one-teacher rural school can secure such materials at a very small expenditure of money, time and effort. For example, a model of a feudal castle can be made (by teacher, or pupils directed by the teacher) for about twenty-five cents—fifty cents at the outside. Of course the collaboration of the pupils will not only tend to eliminate the cost item entirely, but will promote a clearer understanding of the significance of such a model.

To test the practicability of making such a model cheaply, some time ago I made a model of an English castle to illustrate the history of the Norman period. The plans and illustrations may be found in such books as Gross's *Antiquities*, Vol. I., Gotch's *Growth of the House*, ch. 1, Viollet-le-Duc's *Annals of the Fortress*, ch. ix.; see also the article, "The Development of the Castle in England and Wales" in *The History Teacher's Magazine* for November, 1912, (II, 191) and Barnard's *Companion to English History in the Middle Ages*. In case none of these is available to the teacher of the one-room rural school, I submit the following details in the hope that he may profit by my experience.

On a substantial base of cardboard 24 by 30 inches, draw a rectangle 15 by 15. This represents the line of the outer wall. Within draw a square 7 inches by 7. At the corners of the squares the bastions are erected. The accompanying diagram (Fig. I), which is not drawn to scale, gives the ground-plan. The dimensions are approximately: 5 inches from the edge of the cardboard to the moat, which is  $3\frac{1}{2}$  inches wide; 7 inches from the outer wall to the inner; 6 inches from the inner wall to the castle. Obviously these proportions may be varied to suit the needs of the teacher.

Pasteboard, ink, mucilage, paper, water-colors, tinfoil, cigarette boxes, a bit of cloth, pins, toothpicks and string are all the materials needed; while knife, scissors, ruler and pencil are the necessary implements.

Around the wall of the outer bailey narrow strips of tinfoil may be pasted to represent the silvery gleam of water in the moat. The wall of the outer bailey (or of both) and that of the castle can be made by standing cigarette boxes on edge, pasting them to the cardboard and to each other. Thin boxes of a rectangular shape answer best, and when you ask your friends to save their empty boxes for you, make sure that they use brands of cigarettes which have tinfoil in the boxes. By cutting a box in half, lengthwise, then fitting two fourths together and standing this square box on end, towers, bastions, etc., are secured. These are also attached with paste, but can be further strengthened by pasting strips of paper to them and to the cardboard base in the manner of a hinge. Strips of paper can be cut as in Figure II and pasted to the tops of the walls to give the

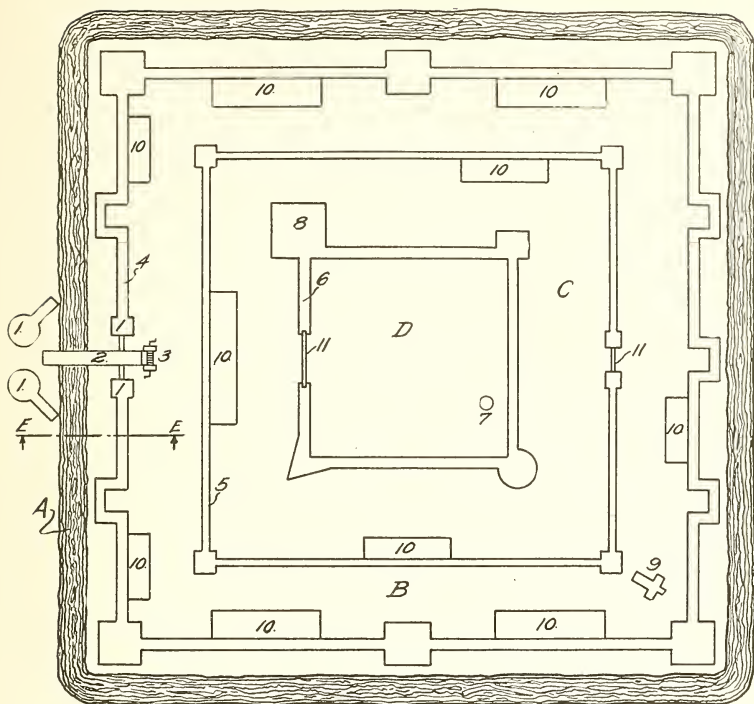


FIGURE I

- |                      |                  |   |               |
|----------------------|------------------|---|---------------|
| A. Moat              | B. Outer Bailey. | C. Inner Bailey.  | D. Courtyard. |
| 1. Drawbridge towers |                  | 7. Well   |               |
| 2. Drawbridge        |                  | 8. Donjon   |               |
| 3. Windlass          |                  | 9. Chapel   |               |
| 4. Outer wall        |                  | 10. Stables, granaries, armories, smithies, houses of retainers, etc. |               |
| 5. Inner wall        |                  | 11. Portcullis  |               |
| 6. Castle walls      |                  |   |               |

effect of battlements. For the walls of the outbuildings, castle and square towers, cigarette, match or pillboxes may be used, as convenient.

Round towers and flanking walls forming the defenses of the approach to the drawbridge are made by rolling heavy paper into cylinders of the desired size, pasting them together, and attaching them to ground by hinges of paper as already directed. The drawbridge is simply a strip of pasteboard, with a paper hinge securing it at the inner end. The windlass is made of two strips of pasteboard, fastened like the towers, with a pin or toothpick on which to wind the chains, which are strings. The portcullis is made of a strip of cardboard arranged to slide between the towers, or walls of a gateway. (See Fig. III). The gate



to the inner wall and the door of the castle—if a door is preferred to another portcullis here—may be either hinged or sliding, as desired.

After the whole model is dry, paint the cardboard within the walls and on each side the moat green, to represent grass. (That within the courtyard may be painted grey or brown to represent a flagged pavement). Dissolve your brown water-color in the least possible amount of water, add enough black ink to make a blackish-gray, weather-beaten looking wash, and color the walls and castle with it. More than one coat will be needed, especially if your cigarette boxes are of different colors. When this is dry, sketch with white ink, or yellow paint, windows, embrasures, etc.

Either a bit of cloth, or paper of various colors may be used to make a flag, which can be hoisted over the donjon tower on a flagstaff made of a toothpick. From a cigarette box of one of the "fancy" brands, the gilt crest can be cut, in shield shape, and pasted as a coat-of-arms over the entrance. If preferred, a real crest may be copied from Burke, or some work on heraldry.

It is well to have a picture of some famous castle (Perry Pictures or Tuck Postcards) to guide you in the construction of such a model. As Figure 1 shows, it is necessary to conventionalize the ground-plan and produce a "typical" castle, rather than try to copy a particular castle, unless you have the co-operation of well-equipped manual training and art departments. Such a model could be used with profit in high school classes in medieval and English history. The making of one would be an excellent and profitable exercise for the history classes of a normal school.

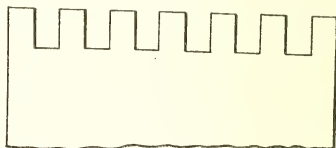


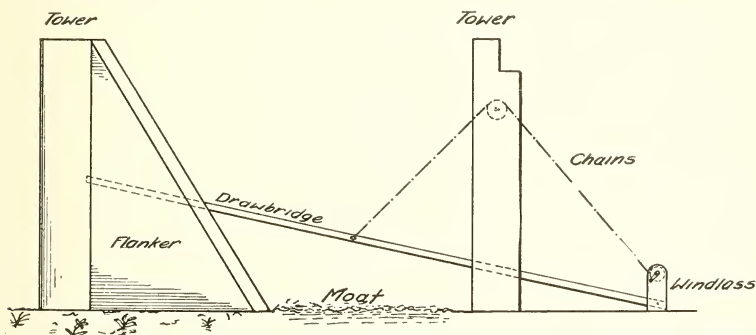
FIGURE II

Such questions as the following [which are the result of showing the model to classes and noting their questions] will serve to stimulate interest and thought.

1. What is this [Portcullis]. What purpose did it serve?
2. Why do the bastions and towers project outside the walls?
- Why are the towers higher?
3. What purposes would the moat serve? How?
4. Where would the water come from? What does this suggest as to the choice of a site for a castle?
5. What purpose do the flankers to the drawbridge serve? Are they necessary? Why?
6. For what are these outhouses?
7. Why is grass left growing in the baileys?
8. Why have two walls around the castle?
9. Why is the donjon tower higher than the rest?
10. Why are there so few entrances? Why so placed?
11. Why are the windows so few, so small and so high up?
12. Of what was such a castle built? Whence obtained?
13. How would you heat such buildings? Why?

14. Who lived in such a place? Why?
15. Was it built for comfort or security? How do you know?
16. Who manned it? Under what circumstances?
17. Compare it with a picture of a castle built about 1550, (e. g. Deal Castle in Tuck Postcards). Which is the more graceful and comfortable? Why?
18. Can you explain why castles like this model were not built after about 1500?

Collateral readings in such works as Oman's *History of the Art of War*, Creasy's *Decisive Battles*, LaCroix's *Military and Religious Life in the Middle Ages*, Froissart's *Chronicles*, and Cornish's *Chivalry*, might be assigned with profit, while the class was working on such a model. Of course the chances of collaboration with the English teacher, in the utilization of historical novels are obvious and manifold. All teachers, I hope, possess "castles in Spain." [Woe be unto the pupil when the teacher ceases to build them!] Here is a chance to visualize one "from turret to foundation-stone," and, unlike that of Douglas, it will not be your king's but your own.



Along with the model, in the teaching of a lesson on feudal warfare, the teacher should display photographs of such masterpieces as Visscher's King Arthur, or the suits of armor in the Metropolitan Museum of Art, or some similar institution.

One more word, and I am done. If you have not already started a historical museum in your school, let this model be the first exhibit in it. With this as a nucleus, you can soon develop something which will help every teacher in the school, and which, with the library and auditorium, will tend to make the school a true community centre. It ought also to be the first step towards the organization of a local historical society, if your community has not one already. On the making and using a museum of history, I cannot possibly do better than call your attention to the brilliant and helpful essays of Professor E. C. Page, namely:

"A Working Museum of History," *History Teacher's Magazine*, March, 1914.

"How the Working Museum of History Works," *Ibid.*, December, 1915.

"More about the Working Museum of History," *Historical Outlook*, Feb. 1920.

See also: Sheap, H., "How I Collected Material for My Museum," *History Teacher's Magazine*, June, 1915.

MILLEDGE L. BONHAM, JR.

*Professor of History,  
Hamilton College, Clinton, N. Y.*

## N. E. A. Program (Continued from page 17)

Wednesday Evening, July 7, 1920, 7:30 o'clock

### HEALTH EDUCATION

#### HEALTH EDUCATION (5 minutes)

Thomas D. Wood, Professor of Physical Education, Teachers College, Columbia University, New York, N. Y., Chairman.

Sallie Lucas Jean, Director Child Health Organization, New York, N. Y.

E. G. Gowans, State Health Inspector, Salt Lake City, Utah.

A. A. Slade, Commissioner of Education, Cheyenne, Wyo.

Margaret S. McNaught, Commissioner of Elementary Education, Sacramento, Calif.

Katherine D. Blake, Principal Public School No. 6, Borough of Manhattan, N. Y.

#### CHARACTER EDUCATION

E. H. Lindley, President University of Idaho, Boise, Idaho.

#### ILLITERACY

Cora Wilson Stewart, Chairman Kentucky Illiteracy Commission, Frankfort, Ky.

#### THRIFT EDUCATION

Arthur Chamberlain, Secretary California Council of Education, San Francisco, Calif.

Thursday Forenoon, July 8, 1920, 9:00 o'clock

### NATIONAL CONGRESS OF SCHOOL BOARDS, CLASSROOM TEACHERS AND SUPERINTENDENTS THE SCHOOL BOARD'S PLACE IN THE EDUCATIONAL SYSTEM (4 minutes)

Albert Wunderlich, Commissioner of Education, St. Paul, Minn.

Frank Gilbert, Deputy Commissioner of Education, Albany, N. Y.

C. C. Hansen, Member of School Board, Memphis, Tenn.

E. C. Day, Member of School Board, Helena, Mont.

Frank Thompson, Member of School Board, Cleveland, Ohio.

O. O. Hoga, Member of School Board, Boise, Idaho.

Mrs. V. H. Miller, Chairman School Board Section Inland Empire Teachers Association, Tacoma, Wash.

Nova Snell, Member of School Board, Lincoln, Nebr.

Mrs. J. H. Barnes, Member of School Board, Duluth, Minn.

J. C. Freece, Member of School Board, Davenport, Wash.

R. W. Corwin, Member of School Board, Pueblo, Colo.

John M. Withrow, Member of School Board, Cincinnati, Ohio.

### THE SURVIVAL OF PROFESSIONAL SPIRIT DESPITE ECONOMIC PRESSURE AND SOCIAL UNREST

John H. Finley, Commissioner of Education, Albany, N. Y.

(Program continued on page 39)

# The Relative Value of Motion Pictures as an Educational Agency

## AN EXPERIMENTAL STUDY

EDITOR'S NOTE. This article is reprinted by permission from Teachers College Record for November, 1919. The italics are our own.

(For lack of space the latter part of Mr. Lacy's article is omitted here. It contains valuable tables of percentage statistics on his experiment, and our readers are referred to the original publication for this additional data.)

IN THE memory of those still young, colleges which concerned themselves most with the morals of their students forbade attendance at the "movies." In spite of such opposition, however, motion pictures have come into their own. They have invaded the churches and the schools; in fact, the motion picture theaters, particularly in the cities, have become the adult continuation schools and the real social centers. Certain cynics hold that academic tradition is the last stronghold against the new; yet even this stronghold is surrendering to the motion picture, for Columbia University has just introduced courses in cinematography. It is now openly admitted that the two greatest modern inventions are motion pictures and the phonograph, for the former preserves that which is good to see and the latter that which is good to hear.

*No one denies that motion pictures have some moral and pedagogical value, so the problem really reduces itself to a comparison of these values with those of other agencies. The exponent of motion pictures has little evidence upon which to base his claims, for experimental data on this subject are practically non-existent.* The purpose of this article is to report the methods and results of some experiments to determine the pedagogical and moral value of motion pictures. These experiments compare the efficiency of three typical methods of presenting a story to pupils: (1) silent reading of a story by pupils, (2) oral telling of the story to pupils, and (3) presentation of the story to pupils by means of motion pictures.

The ultimate evaluation of these three methods of presentation will depend upon a number of measurements, including the influence of each upon vision, social behavior, and other aspects of personal experience. Only four measurements were applied during these experiments. The questions which the investigation was designed to answer were: (1) Which method gives pupils the most factual knowledge? (2) Which method stimulates the largest amount of thinking or inference? (3) Which method most improves the ability of pupils to make moral discriminations? (4) Which method is most interesting to pupils?

The experiments were conducted and the results statistically treated as described in detail in the latter part of the article. The data tabulated support the following conclusions:

*Under the conditions of our experiments, questions of fact, inference, or moral discrimination can be answered more adequately when the narrative material has been presented by a story-teller or as reading matter than when presented through the motion picture; of the two more successful methods of presentation, the story-telling has the advantage.*

The relative merit of the different methods of presentation, stated more exactly, is as follows:

1. Superiority of presentation through reading matter to presentation through the motion picture, as concerns
  - (a) questions of fact, 7.26 per cent
  - (b) questions of inference, 8.375 per cent
  - (c) questions of moral discrimination, 5.525 per cent.
2. Superiority of oral presentation to presentation through the motion picture, as concerns
  - (a) questions of fact, 12.21 per cent
  - (b) questions of inference, 9.475 per cent
  - (c) questions of moral discrimination, 5.35 per cent.
3. Superiority of oral presentation to presentation through reading matter, as concerns
  - (a) questions of fact, 4.95 per cent
  - (b) questions of inference, 1.1 per cent
  - (c) questions of moral discrimination, 0.175 per cent.

When the results of the different tests are combined by averaging the figures given above, the relative merit is as follows:

Superiority of presentation through reading matter to presentation through the motion picture, 7.053 per cent; of oral presentation to presentation through the motion picture, 9.012 per cent; and of oral presentation to presentation through reading matter, 1.958 per cent.

After a part of the story selected had been presented to the pupils by each of the three methods, and the first measurements had been taken, a supplementary experiment was conducted to investigate the attitude of the subjects toward the various methods of presentation, and to discover the one which had made the largest appeal to their interest. An opportunity was given for the subjects to vote upon the method by which they desired that the remaining two-fifths of the story be presented, with the understanding that the preference thus expressed would be respected. As was to be expected, the vote favored the presentation through the motion picture; next in order came the reading, while story-telling was the least popular of all. The percentages were respectively 90.8, 5.0 and 0.4, 3.8 not voting. *Thus our results would indicate that the order of effectiveness of the various methods, where appeal to interest is concerned, is exactly the opposite of that which obtains if the ability to reproduce and apply the material presented is considered.*

After an interval varying from three to five weeks the same four measurements, excepting the interest measurement, were repeated to determine the permanent value of the three methods of presentation. The data tabulated support the following conclusions:

*Under the conditions of our experiments, questions of fact, inference, or moral discrimination can be answered more adequately upon delayed recall when the narrative material has been presented by a story-teller or as reading matter than when presented through the motion picture; of the two more successful methods of presentation, story-telling is the more advantageous.*



The relative merit of the different methods of presentation, stated numerically, is as follows:

1. Superiority of presentation through reading matter to presentation through the motion picture, as concerns
  - (a) questions of fact, 0.95 per cent
  - (b) questions of inference, 2.35 per cent
  - (c) questions of moral discrimination, 0.55 per cent.
2. Superiority of oral presentation to presentation through the motion picture, as concerns
  - (a) questions of fact, 4.25 per cent
  - (b) questions of inference, 5.85 per cent
  - (c) questions of moral discrimination, 3.625 per cent.
3. Superiority of oral presentation to presentation through reading matter, as concerns
  - (a) questions of fact, 3.275 per cent
  - (b) questions of inference, 3.50 per cent
  - (c) questions of moral discrimination, 4.175 per cent.

When the results of the different tests of delayed recall are combined by averaging the figures given above, the relative merit is as follows:

Superiority of presentation through reading matter to presentation through the motion picture, 0.917 per cent; of oral presentation to presentation through the motion picture, 4.575 per cent; and of oral presentation to presentation through reading matter, 3.65 per cent.

The differences between the various methods of presentation are less in the tests for delayed recall than in the original ones. The same relative position, however, is retained by each method. The decreased differences may be explained by the fact that since the material was all taken from one story, there may have been transfer of ideas from one section of the story to another, and this would particularly affect the tests of delayed recall. Although the questions were worded very carefully to prevent such possible transfer, still the greater familiarity with the characters would be sufficient to lessen the actual differences between the various methods, were there no other sources of transfer. The differences are still marked, however; and if this factor has operated, our conclusions, as a result, are conservative.

Various questions as to the degree of confidence which should be placed in the results readily suggest themselves. A number of these will be discussed briefly.

*First, was the reliability of the conclusions affected by departures from the original plan of the experiment?* Such could scarcely be the case since, with two slight modifications, the experiment was conducted as originally planned, and these modifications were not such as to affect the results presented.

*Second, were the subjects a representative selection?* They were boys from two New York schools. Since these schools were situated on the lower east and west sides, respectively, the subjects were chiefly Hebrews and Italians. The strictly American stock was not well represented. It is possible that results obtained from experiments upon members of different nationalities might vary somewhat from those obtained in our experiments; but it is not highly probable that they would vary to such an extent as to change our conclusions, inasmuch

as the results obtained from both nationalities are essentially the same, although the two groups differ so widely in their characteristics. Further, the variation in age (from 11 to 17 years) is sufficient to justify the application of our conclusions to older children and possibly also to adults.

*Third, were the test questions used fair to all the methods of presentation?* In answer it may be said that since the questions were selected so that the elements of the story involved were common to the three types of narrative material, none of the methods was favored in this regard. The objection may be raised that the motion picture does not supply the words of the story as do story-telling and silent reading. This statement is in part true; still, through the captions of the motion picture most of the essential words are vividly portrayed. Although the rest of the words are not supplied, this lack is inherent in the method of presentation, and a distinctive difference of this sort is just the type of factor the tests were designed to measure.

*Fourth, have all the factors involved been investigated?* Considerations of time and convenience have necessarily limited the research. For example, it would have been desirable to investigate the effect of the various methods of presentation on the conduct of the children. Some steps were taken to devise tests to subject this factor to quantitative investigation, but the undertaking was abandoned because of the time which would have been required for such a study. Furthermore, the investigation should be supplemented by experiments which would eliminate any constant error due to the fact that but one motion picture and one-story-teller were introduced. The investigation, therefore, can make no claim to completeness, nor does it make possible a final estimate of the relative value of motion pictures as an educational agency. It may serve, however, to point out the advantage of methods already in vogue and serve as a warning against the assumption that motion pictures are unqualifiedly our most valuable educational agency.

The remainder of this article is devoted to a description of the method of procedure followed in conducting the main experiments and the treatment of results, and presents the data upon which the conclusions cited earlier are based.

"The Hoosier Schoolmaster," a five-reel feature film, was selected as a suitable motion picture for the experiments, only the first three parts being used as a basis for measurement. Equivalent material in printed and story form was provided in the following manner: A student who had majored in English during her college course viewed the motion picture. She then wrote up the story as carefully as possible, taking care to include all essential facts as a basis for prospective test questions. She then polished the story by substituting as far as possible the words of the author, that the material thus prepared might be equivalent in artistic and dramatic effect to the motion picture. This material was multigraphed and used for silent reading. It served also as the basis for the story-telling, a practically verbatim reproduction being given by the story-teller.<sup>2</sup>

The subjects for the experiments were three hundred and fifteen boys from

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2. The story-teller was a grade school principal above the average in native ability, though not a trained story-teller.

two New York public schools.<sup>3</sup> At one school six 7A grades participated; at the other, four 8A and two 9A grades. The 7A grades included boys from 11 to 15 years of age, with the median age at 13; the 8A and 9A grades, boys from 12 to 16 years of age, with the median age at 14. These twelve classes were divided into four experimental units, three classes in each group, as indicated in the table.

TABLE I

ARRANGEMENT OF CLASSES AND NUMBER OF SUBJECTS						
Experimental Unit	I	School	I	7A1 <sup>4</sup> (22) <sup>5</sup>	7A2 (30)	7A3 (17)
“	“	II	“	I 7A4 (24)	7A5 (21)	7A6 (21)
“	“	III	“	II 8A1 (35)	8A2 (23)	8A3 (32)
“	“	IV	“	II 8A4 (31)	9A1 (24)	9A2 (35)

The rotation experimental method was used in the presentation of the material. The procedure in Experiment I, which is typical of that followed in the other experiments, is indicated below.

TABLE II

EXPERIMENTAL UNIT I			
ORDER OF PRESENTATION OF MATERIAL			
Week	Motion-Picture	Silent Reading	Story-Telling
First	7A3	7A2	7A1
Second	7A2	7A1	7A3
Third	7A1	7A3	7A2

The first week three of the 7A sections were presented the three forms of material: 7A3 saw the first reel of the motion picture; 7A2 read from multigraphed copy the equivalent part of the story, and 7A1 heard the same part of the story as told by the story-teller. The second week a similar procedure was followed, but a different method of presentation for each section was employed. Thus, for example, 7A3 heard but did not see the second part of the story. The third week a shift was made again, so that at the end of that time each grade had had an opportunity to see, read and hear one part of the story.

#### THE TEST QUESTIONS

As has been indirectly indicated, the results of the various methods of presentation were measured by means of a series of test questions. The principles governing the making out of the test questions were as follows:

1. Select the most important ideas and facts for interrogation.
2. Ask enough questions to cover all the important ideas and facts.  
(Some less important ones were also included.)
3. Make the questions independent of each other.
4. Word all questions in such a way as not to answer others.
5. For single questions select unit facts and ideas.
6. Use language that all pupils understand easily.

3. The author wishes to acknowledge gratefully the cooperation of Principals Marks and Wade of Public Schools 64 and 95, respectively, with whose permission and assistance the experiments were conducted.

4. The numbers following 7A, 8A, and 9A refer to the sections.

5. The figures in parentheses indicate the number of subjects in each group who completed the experiment.

These test questions were of three different kinds: questions of fact, questions of inference, and questions of moral discrimination.

The fact questions consisted of forty interrogations concerning events and actual facts presented by the three methods previously described—through the motion picture, the reading, and the story-telling. Below is a sample of the questions and also of the preliminary directions which were placed above the questions.

*Directions.* When the answer to a question is "Yes," draw a line under the word "Yes." When the answer to a question is "No," draw a line under the word "No." Be sure to answer every question; guess at the answers to the questions that you do not know. Do it like this:

Did the story take place in the city?	Yes	No
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Did the story take place in the country? <sup>6</sup>	Yes	No
---	-----	----

Was Mrs. Means' house neat and in order?	Yes	No
--	-----	----

Did Bud have a sister?	Yes	No
------------------------	-----	----

Was Mr. Means whittling?	Yes	No
--------------------------	-----	----

Answers to these questions could in each case be secured from the material which the subjects had actually either seen, read, or heard. Thus, to take the first sample given, "Was Mrs. Means' house neat and in order?" a very untidy home is displayed in the picture, and a statement to the effect that Mrs. Means was a very untidy housekeeper is made in the story.

The questions of inference consisted of twenty interrogations, answers to which were to be inferred from the facts presented. Although the illustrative questions printed below appear to be of the same nature as the fact questions, such is not the case, for the answers to these could not be directly obtained from the material presented.

Did Mrs. Means think the schoolmaster would make a pretty good husband for Mirandy?	Yes	No
---	-----	----

Did Mrs. Means offer to get Ralph's coat mended because she was fond of him?	Yes	No
--	-----	----

Did Hanna do a good piece of work on the coat in order to spite Mrs. Means?	Yes	No
---	-----	----

The moral discrimination questions consisted of twenty interrogations, which, as the name indicates, required for answer the exercise of moral judgment. Illustrative questions appear below:

Should Jack have told what he knew about the store robbery?	Yes	No
---	-----	----

Was it right for Bud to speak up for Hanna against his mother?	Yes	No
--	-----	----

Was it wrong for Ralph to ask Mrs. Means to mend his coat?	Yes	No
--	-----	----

Would the Captain with a wooden leg make a good friend?	Yes	No
---	-----	----

Three sets of test questions, one of each type, were prepared for each of the three parts of the story, thus making a total of nine.

JOHN V. LACY,

*Secretary for Sunday School work in Korea under the Board of Sunday Schools of the Methodist Episcopal Church.* *Seoul, Korea.*

6. Although the illustrative questions given the subjects are but two forms of the same question, no duplication occurred in the text of the test itself.

## N. E. A. Program (Continued from page 32)

### ADEQUATE SALARIES FOR TEACHERS

P. P. Claxton, U. S. Commissioner of Education, Washington, D. C.

**Thursday Afternoon, July 8, 1920, 2:00 o'clock**

### THE PART THE TEACHER SHOULD PLAY IN THE ADMINISTRATION OF THE SCHOOL SYSTEM (4 minutes)

M. G. Clark, Superintendent City Schools, Sioux City, Iowa

Cornelia Adair, President of National League of Teachers Association, Richmond, Va.

J. R. Kirk, President State Teachers College, Kirksville, Mo.

O. C. Pratt, Superintendent City Schools, Spokane, Wash.

### EDUCATION FOR THE NEW ERA

Payson Smith, Commissioner of Education, Boston, Mass.

### WHAT SHOULD BE DONE TO KEEP HIGH CLASS SUPERINTENDENTS IN THE SCHOOLS (4 minutes)

E. O. Holland, President Washington State College, Pullman, Wash.

William M. Davidson, Superintendent of Schools, Pittsburgh, Pa.

E. O. Sisson, President University of Montana, Missoula, Mont.

Charles E. Chadsey, Dean of Education, University of Illinois, Champaign, Ill.

**Thursday Evening, July 8, 1920, 7:30 o'clock**

### FINANCING OUR PUBLIC SCHOOLS

#### RURAL SCHOOLS

W. C. Bagley, Professor of Education, Teachers College, Columbia University,  
New York, N. Y.

#### FROM THE BUSINESS MAN'S STANDPOINT

Frank A. Vanderlip, New York, N. Y.

#### FROM THE STANDPOINT OF THE STATE

Frank O. Lowden, Governor of the State of Illinois, Springfield, Ill.

**Friday Forenoon, July 9, 1920, 9:00 o'clock**

#### IDEALS AND STANDARDS OF THE AMERICAN HOME

Sarah Louise Arnold, Dean of Simmons College, Boston, Mass.

#### BUSINESS SESSION

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### This Will Do It

Date.....

“VISUAL EDUCATION,” 327 South La Salle St., Chicago, Ill.:

☐ In check  
draft  
money order  
(not stamps, please) I enclose one dollar for one year's subscription.

☐ This is my order for one year's subscription. I await your bill.

Name.....

Address.....



# Pageantry Notes

SCENES from a "Midsummer Night's Dream" and from "Robin Hood" were presented in the May Festival at Bryn Mawr, May 7th and 8th. The pageants and plays, which were most elaborate, were staged on the picturesque campus of the college, and the parts were played entirely by students.

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A MAY pageant of unusual interest was presented on the campus at Collegeville, Pa., May 15th. The audience, seated in a natural amphitheater, beheld the actors advancing in a picturesque procession to the open green. The crowning of the queen of the May was observed with appropriate Maying songs and dances and the ceremonies ended with a May pole dance.

Following this performance a play, "Miss Cherryblossom," was also presented on the campus.

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IN 1858, the General Assembly of the State of Iowa passed an act establishing a model farm and appropriated \$10,000 to establish it. In the same year, 1858, President Lincoln signed the Morrill Act passed by Congress, granting land to every state in the Union for the establishing of colleges of agriculture, mechanics, arts and other related subjects.

On June 7th Iowa State College presented a vast pageant to depict its own history and thus to symbolize by a specific example the growth of the ideals and influence whose conception was made possible through the occurrences of 1858.

A brief outline of the episodes is reprinted below.

In episode one, History introduces the committees and the delegates from the counties desiring the location of the model farm. The honor is conferred, after much balloting, upon Story County.

Episode two shows the Spirit of Education influencing a country lad to enter the Model Farm. Then is re-enacted the laying of the cornerstones of the college in 1862. Eager boys and girls hasten to

enter into the college through the gate of opportunity. At the end of this scene Father Time wanders across the stage, indicating that the time is now 1920.

The Spirit of American Vision comes in episode 3 to question the Spirit of Iowa State Teachers College concerning her use of trust bestowed upon her fifty years before. Thereupon the achievements and divisions of the institution are marshalled in order before American Vision.

First comes the division of industrial science, with symbolical figures representing History, Botany, Physics, Mathematics, Modern Languages, English and other foundation subjects. These groups are richly costumed and each brings gifts to the educational world.

Then the trumpets announce the approach of the Division of Home Economics. The Spirit of Home Economics presents such gifts as Foods, Cooking, Art, Textiles and Home Management to a grateful mother, who in turn shares them with community groups representing industries and trades.

The march of the divisions is interrupted by the Spirit of Gaiety, who leads in May Day revelers.

Following this interlude comes the Division of Veterinary Medicine. In this group are men who have made themselves great throughout all the ages by their skill and inventions in medicine. Personified diseases circling about this group are put to ignominious rout.

The Division of Agriculture is ushered in by horses and chariot in which sit Ceres, Pomona and Flora. About the chariot dance figures, allegorical of the harvests and fruits and trees. In a beautiful carnival they present their offerings to the world.

Bridge builders, figures symbolizing Architecture, Ceramics, Fire, Water, Steam and Electricity, with Miners and Chemists form the Division of Engineering next in order to appear.

At the end of the procession the Graduates throng to receive their reward from the Spirit of Education and then, with a blare of trumpets, Education, Religion

and Service, guided by American Vision, advance to lead their divisions onward.

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THE beautiful Wooded Island in Jackson Park, Chicago, furnished the setting for an unusual pageant given June 5th. The Wild Flower Preservation Society in conjunction with the Junior Drama League presented a wild flower pageant to which the school children of Chicago, their parents and friends were invited. In the afternoon a farewell ceremony was observed in honor of the Old Field Museum, whose contents have just been moved into the new building near Twelfth Street.

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A PAGEANT of Spring was presented at the State Normal School, Indiana, Pa., on June 5, in connection with the closing exercises. Previous to this, on May 28th, a large musical festival had been given under the leadership of the director of the Conservatory. A chorus of 250 school children, together with a local musical organization, and out-of-town artists appeared in the production.

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AN elaborate production of the notable piece, The Continental Congress, will take place at Aberdeen, South Dakota, in July and August.

This pageant, under the general direction of the Honorable J. L. O'Brien of the United States Bureau of Education, has been given in Washington, D. C., Birmingham, Ala., Nashville, Tenn., Charlottesville, Va., and many other places. The first production was staged some years ago by the Department of the Interior before 10,000 people at Washington. Mr. O'Brien will have general charge of the performance at Aberdeen also.

The uniforms and accoutrements of the Continental Army will be furnished from Washington; other costumes will be the work of experts in this line. From two to three hours will be required for the performance of this pageant.

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THE following pageant was written by the pupils of the Nathaniel Hawthorne School of Oak Park, Illinois, in commemoration of the tercentenary

anniversary of the Landing of the Pilgrims and was presented at the Hawthorne Gymnasium on the third and the fourth of June.

The pageant is divided into a prologue and six episodes. A brief synopsis of these episodes, together with extracts from the dialogue is reprinted below.

It will be noticed that each part, while necessary in carrying out the development of the theme, is so arranged that opportunity is given for much interesting variety in entertainment.

The last two episodes show the expansion of the Pilgrims' ideals of liberty, freedom, and equality all of which resulted in the Declaration of Independence and in the conquering of the wilderness. This last part is beautifully symbolic.

As is very evident, this is a remarkable production for children in the grades. It shows creative power, dramatic instinct, familiarity with historical events, and considerable ability to see the underlying significance of these events.

### Episode I (English Scene)

Setting—May-day scene in English village.

Children are playing, picking flowers, and dancing rustic dances such as, "A Hunting We Will Go." The entrance of Robin Hood with his men furnishes more gaiety and merriment. In the midst of the dancing, the Pilgrims enter to say farewell. Their somber attire and quiet demeanor emphasize the joy and happiness that they are leaving behind, as they start their uncertain adventuring after religious freedom.

### Episode II (Dutch Scene)

Setting—A market place in Holland.

Small Dutch children are attempting to inveigle the Pilgrim children into playing their games and reading their books with them. The Pilgrim elders behold this proselyting with horror and send the children to their homes. This scene makes apparent the immediate reason for leaving Holland.

### Episode III (Indian Scene)

Setting—An Indian village.

Squaws, Indian maidens, and children

carry on the various activities characteristic of an Indian village; some weave, some grind maize between stones; a medicine man weaves charms beside the large war drum; a mother sings a lullaby to her papoose; the small boys engage in a miniature hunt. A sound from the forest halts all motion until the chief with his befeathered and painted warriors returns from a successful hunt. All join in a dance of triumph which is interrupted by a breathless runner announcing the approach of a rival tribe. Instantly the peaceful scene changes; the men prepare for battle with war song and dance.

This scene is intended to prepare for the coming of the Pilgrims and to show the Indians as they were before the arrival of the white men.

#### Episode IV (The Mayflower)

(Scene 1)

Setting—Main room of the cabin.

John Carver, Miles Standish, Bradford, Billington, Elder Brewster, Alden Hopkins, Robinson, and others whose names are household words, are seated in the cabin, with the women at their spinning-wheels. The need for establishing an acceptable government in the new colony is discussed as follows:

*Carver:* It seemeth we have need to discuss plans for ye carrying on of governmente of our colonie. It seemeth clear that an understanding must be sought whereby we may have an equal chance.

*Billington:* Master Carver has well said; we should understand each other that when we come ashore we should use our own libertie.

*Hopkins:* I agree with Master Billington; we were to land at ye mouth of ye Hudson; landing in this strange bay certainly absolves us from any obligations to the Virginia Company.

*Bradford:* Truth, no one hath power to command us. Ye patente we have is for Virginia and not for New England which belongs to another governmente with which ye Virginia Company hath nothing to do. We have no place of appeal. Our worthe brother hath put ye case well.

*Standish:* Therefore, we must make a

law for ourselves; a colonie cannot exist without a governmente.

*John Alden:* Yes, Friend Standish, that is what we must therefore do.

*Robinson:* Let it not be a political manifesto such as a scheming cabal, let it be a policie of self governmente imposing equal laws on all and giving to all an equal chance as Master Carver said.

*Standish:* It is to be man for man, and ye simple manhood in each man is what counts.

*Elder Brewster:* Ye central idea be ye right of each to his own individual libertie, ye obligation to each of us to use his libertie as not abusing it and subordinate his mere selfish aims to ye common good, and to make of our body politick genuine human brotherhood. The Kingdom of God cometh not with observation.

(Scene 2)

Setting—Same cabin in the Mayflower.

Six conspirators, members of the crew, plot against the welfare of the Pilgrims, but are finally obliged to sign the Mayflower compact with the others. This momentous historical event is given its deserved importance by the solemn attitude of the Pilgrims, and the dignified reading of the Compact, together with the chanting of the 100th psalm.

#### Episode V (Scene 1)

Setting—Interior of a log cabin in Plymouth, Mass.

Nineteen men gathered about the table are discussing the establishment of a military force for protection against the Indians. Miles Standish is selected leader; at his request retaining the title of captain. As they are talking, Desire Minter, wild with fright, rushes in, screaming that the Indians are coming. The men seize their arms as the hubbub and confusion increase outside. Suddenly the Indian, Squanto, appears in the doorway with the dramatic greeting, "Welcome Englishmen!" In the ensuing conversation, the friendly attitude of the Indians is made clear.

(Scene 2)

Setting—A forest glade.

Massasoit, with his braves about him is awaiting the English. Winslow entering with gifts, announces the arrival of

Carver with his musketeers. A treaty is made and the peace pipe smoked.

(Scene 3)

Setting—Street before Independence Hall.

The street is crowded with cheering people; a small band of Hessians marches by jeered at by the mob; Jefferson, Franklin, Sherman, Adams, Livingston, and other patriots pass into the building. Several young men join a regiment of ragged Continental soldiers and march away while the band plays Yankee Doodle. Adams again appears on the balcony and reads the Declaration of Independence. The people shout, the royal coat of arms is torn down, and a small boy cries, "Ring, grandpa, ring!"

### Episode VI

Setting—The forest, with America asleep on a dais partially concealed by a misty curtain.

The spirit of the Wilderness with the

Powers of the Forest, the Powers of the River, and the Mist Maidens dance, their revelry being interrupted by a shot. The spirits disappear in anger as a group of pioneers enters, but re-appear, with branches with which they lash in vain the Pioneers. As they go, the Powers of the River stream in with white scarfs (foam) and attack the Pioneers. The Pioneers show signs of weariness and are gradually overcome by the Mist Maidens and the Spirit of Fever. They are revived, however, and conciliate the Spirits of the Wilderness, all joining in a song. At the end of the song a large band of other nationalities enters and America awakes. From the large group come leaders bearing gifts to America, democracy, liberty, education, and art. They sing "America the Beautiful."

*Curtain.*

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## Miscellaneous Notes

**L**ARGE commercial and industrial organizations are more and more using motion pictures to promote their general sales work according to an article by Alfred Pittman in *System*, quoted at length in the *Literary Digest* for May 29, 1920.

For instance, a company manufacturing a new type of airbrake, found difficulty in persuading railway executives to go out into the yards to witness a demonstration. There was no difficulty encountered, however, when the same officials were requested to sit in their easy chairs and view the projection of the apparatus on the screen—and the moving pictures made good.

In another case, four Chicago security houses were trying to float an issue of bonds for a public utilities corporation. The representatives of the bond houses interested, wished to see the properties of the corporation, but a trip of at least three days would have been required to cover even the most important of them. What was done? Moving pictures of all the properties and communities served

were made and shown to the visiting representatives. What was the result? The time used was three hours instead of three days; far more ground was covered in detail through the visual method than could have been covered through the physical method, and the negotiations were satisfactorily concluded at a saving of half the time, effort and expense.

A breeder of pure-bred hogs took a moving picture of his herd with him to his prospects and with the use of a "suit-case" projector actually brought his animals into the prospective customer's office and in every case clinched the deal. The price of the film and projector was more than paid for in the revenue of his first two sales.

The International Harvester Company produces pictures of general educational value to the farmer without the least suggestion of commercial advertising, estimating that whatever tends to make farmers prosperous is of advantage to the company.

Most of these commercial films are without the shadow of a plot but in a

number of cases a slight framework of a story has been used on which to hang the facts. A film recently produced for Marshall Field & Co. as an exposition of the company's lace factories, used a faint romance as a basis for the picture, but this method is the exception rather than the rule.

In many cases, pictures are used in industrial plants to instruct workers in various operations and have proved to be the most successful and rapid method of training.

These are but a few of the many examples in the article by Mr. Pittman showing the enormously varied opportunities that await the motion picture in the fields of industry and commerce.

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THE following article has recently appeared, quoted from a London weekly, "The Graphic":

"Situated in a beautiful garden, in the suburbs of the Californian city of Los Angeles, stands the Clark Observatory, planned and built solely for the benefit of the public, who are admitted free on five nights a week. Its graceful tower is sixty feet in height, and consists of three stories. On the ground floor there is a large collection of photographic transparencies of the heavenly bodies. The first floor houses the library and the third floor contains the telescopes, under a copper dome.

"The chief telescope is a six-inch refractor. There are four other telescopes of smaller size, three field-glasses, three stereopticons, a moving-picture machine, and various other astronomical apparatus. What you can see through the telescopes at the observatory—and it really needs a highly trained eye to appreciate the full significance of what is seen—is supplemented by many other ingenious and instructive devices, which make the mystery of the heavens as plain as a pikestaff to the meanest intelligence.

"The star maps and models, which have been specially invented by the curator, Dr. Baumgardt, who is a Swede, are wonderful. The maps, fourteen inches by seventeen inches, faithfully portray portions of the night sky; and over 150 of the maps, covering the whole of

the heavens, are now being prepared. The stars are represented by small illuminated disks mounted on a black background, and by taking the map out in the open it is possible to compare it with the heavens. A particularly interesting map is that showing the Milky Way, a foot wide.

"A large plaster of Paris model of the moon—most models of which are flat—will, when finished, portray the exact appearance of the moon as seen through the great telescopes. By means of certain dental instruments the exact contour is being obtained—an enormous task to undertake, since there are hundreds of craters, not to mention lunar mountains and valleys.

"Another feature of the observatory is the models of the planets of our solar system, made to scale, with a circular ring upon the floor which represents the sun. The larger models are of wood, the smaller of brass, but all are painted as they appear through a good telescope. Beneath, on the platform, is a planetarium illustrating the weekly positions of the planets and demonstrating many astronomical facts relating to the earth, sun, and moon, their positions and motions. In short, the whole science of astronomy is reduced to the utmost simplicity.

"The star photographs in the observatory are framed and illuminated by electric light in a very ingenious way. Those of the moon are shown with a white light; those of the sun have a yellow tint; and those of the nebulae, star clusters, spirals, and comets have a soft blue light. In each instance the exact appearance is given as when viewed through a large telescope. Here, too, is an interesting spectacular display of radium. Recently the curator made a container of radium in which the bombardment of the alpha particles of radium can be seen many feet away, a wonderful sight. The Americans have set an example which might well be followed by ourselves."

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DR. Charles W. Eliot, president emeritus of Harvard University, believes most whole-heartedly in the use of motion pictures in the schools



as a means of education. He deplores the fact that methods of education have hitherto depended to a great extent on the ear, and rejoices in the fact that the eye is at last coming into its own. Speaking before the National Association of Cotton Manufacturers held recently in Boston, he says: "We have been accustomed to depend upon the ear very largely to begin with . . . It is a very inferior method to education through the eye."

Dr. Eliot cites his own experience as a student in chemistry to prove that the lecture method is practically valueless compared with the visual method for, "You have got to see the experiment you try and its results, and its operations must be guided by the eye."

★ ★ ★

**V**ISUAL methods were used in making vivid the report of the board of Home Missions of the Methodist Episcopal church to the general council held in Des Moines, Iowa, May 10th. The progress made in the rural church, the foreign speaking community, and other branches of home missions were presented in moving pictures.

★ ★ ★

**A**CCORDING to an article in a recent number of Current Opinion, operas are to be seen as well as heard, and future productions are to be made a delight to the eye as well as to the ear. As a matter of fact, the vivid interiors, designed by prominent American stage decorators, and the exquisite tones of the costumes and mountings made such a charming visual appeal that a number of this season's operas were a marked success, whereas if dependence had been placed upon the music alone, the success would have been indifferent.

Boris Anisfeld, the Russian colorist, has created the scenes for a number of brilliant productions, among them La Reine Fiamette and Wolff's "The Bluebird," based on Maeterlinck's drama of the same name. Norman Bel-Geddes designed the background for a new opera, "La Nave," which was given in Chicago last November. The atmosphere of the gorgeous Spanish court of Philip IV was

revived by Robert Edmund Jones for the presentation of "The Birthday of the Infanta" by John Alden Carpenter.

The beauty of the scenes of these productions has made a new standard in opera setting and proves conclusively that the visual element is destined to a higher position in the art of the operatic stage.

★ ★ ★

**N**EW YORK University in a recent luncheon, given at the Biltmore for members of the college faculty and several hundred of the alumni, honored a man, whose achievements, it is claimed, made possible the ultimate development of the motion picture. In 1840, Dr. John W. Draper, professor of physics and chemistry at New York University took the first photograph of the human face. It is not difficult to realize the vast significance of this event in view of the fact that the moving picture industry is one of the largest in the world with a host of correlated industries in its train.

★ ★ ★

**J**UDGE Ben B. Lindsay is continually demonstrating the fact that he is a versatile man of genius. In addition to his work in his famous juvenile court, he is to appear on the screen in a production for Paramount Arcraft. The picture which is temporarily named "The Boy" is a story built on the theme of the boy-problem and affords Lindsay an opportunity to show his methods of procedure. With Judge Lindsay appears his wife who works with him in courtroom and office.

★ ★ ★

**T**HE Bureau of Education of the Department of the Interior has just published a booklet named "Motion Pictures and Motion Picture Equipment." This handbook was issued to answer the hundreds of inquiries addressed to the Bureau and to encourage visual education throughout the schools of the United States.

Before the booklet was printed a questionnaire was sent out and from the knowl-

(Continued on page 70)

# Society for Visual Education

(Incorporated)

327 South La Salle Street

Chicago, Illinois



## THE SCHOOL FILMS OF THE SOCIETY

Everything worth while is produced or carried out in harmony with a more or less explicitly formulated set of principles. This is true in making the constitution of a country, or in prosecuting a military campaign, or in constructing a transportation system, or in writing a book. It is true in the plans for the school films of the Society for Visual Education. The principles which have guided and are guiding the production of these films are:

*They must show what is true.* This does not mean that it is sufficient to avoid what is false, for such a truth might be entirely misleading. For example, the statement that a certain man never beats his children on three successive Sundays might not be erroneous, but it might give a false impression. The just criterion of the truth of a film is the correctness of the mental pictures which it produces in the minds of those who see it.

It follows that if a film is true, in the sense in which the term is used here, it will not show the exceptional, the abnormal, and the bizarre, but rather the typical and the normal. The former would be chosen by the showman; the latter by the educator. The former may excite wonder; the latter prepares one to get along in the world. More concretely, good instruction in elementary English is that in which the pupil is taught to speak and write well of things that naturally come within his horizon; good instruction in arithmetic deals with problems that arise in ordinary lives; good instruction in geography lays emphasis on the normal features of plains, and valleys, and mountains, and rivers, and lakes, and oceans; good instruction in citizenship makes clear the governmental problems and processes of our own land at the present day; and good instruction in health and sanitation brings home the importance of cleanliness, of pure food and water, of care of the eyes and teeth, and shows how the more common infectious diseases are spread.

School films which are not true are immoral, for it is positively wrong and vicious to print erroneous pictures on impressionable minds. Such mental pictures are not like drawings on a blackboard which may be erased at will; they are deeper things like scars which last forever. That is, no mind which has once believed falsehoods is ever the same as it would have been if it had believed the truth. The opinion that an error of childhood can be fully corrected in the hard school of later experience is fallacious; the error is simply shown to be an error, and the result is too often cynicism and a loss of ideals.

*They must show what is important.* The school days of a child do not last long and the things he should be taught are very numerous. On some memorable morning the little fellow starts to school for the first time, and the day is one of excitement and adventure. In a week he is established in his new

environment. It is not long until he is on the team. A little later he leaves school and is at work, for he wants to be a man and have a job and make money. In the brief interval between his entrance and his departure he must be taught reading, writing, spelling, arithmetic, geography, grammar, history, civics, elementary science, music, and numerous other things which are intended to prepare him to make his way in the world. Obviously, they will all be taught imperfectly for the time is much too short to teach them well. It is equally obvious that since very much must be omitted, only important things should be retained.

Moving pictures are a powerful means of giving instruction. They make sharp and lasting mental impressions. They are the only simple means we have of making clear the processes of life and industry. They are difficult and expensive to produce. Consequently it would be a crime to employ in schools such precious and expensive means of education for showing simply trivial and amusing things. For these reasons the films which the Society is producing on History, Geography, Citizenship, and Health and Sanitation are designed for serious purposes. They depict the great events in our history and make clear the reasons for them. They show the natural features of our country, and its agriculture, industry and commerce. They drive home the fact that our government serves its citizens in countless ways and is worthy of their loyal support. They emphasize the benefits of correct habits and sanitary surroundings and the health that follows from them.

*They must be of interest.* What is taught, whether by moving pictures or by other means, should be interesting. Otherwise the child will not have his curiosity stimulated, his imagination fired, or his ambitions aroused. Education based on the theory that the naturally active mind of a child should be curbed until it becomes the passive receptacle for useless information will not lead to satisfactory results. The active attitude of mind should be encouraged, and this can be done only by things that are interesting.

The question arises whether the things that are true and important may also be interesting. When one thinks of the success of deliberate fakes and of silly things he naturally doubts it. But these things succeed largely because people are simply trying to break up the dull monotony of their lives. When they take a vacation or are on an outing they soon tire of frauds. A farmer at a fair in the morning will be found venturing on a merry-go-round or marveling at the peculiarities of a wart hog. Before night he will be much more interested in tractors and Poland Chinas. The useless things are not of permanent interest. It is doubtful if many men could be found who could be hired to do permanently something which they knew to be of no economic value. Is it not true that few men could be induced, for example, to carry a pile of bricks from one place to another and then to return them, and to continue the process in an endless cycle?

The child has an advantage over the adult. The world is all new and wonderful to him. The voyages and travels of explorers give a thrill that the dulled and cynical mind of a mature person can never experience. The story of how we get our food and clothing and houses is inherently, and can be made,

as interesting as any fiction. The natural scenery of our own country is more wonderful than any that can be imagined. Moreover, a person always realizes that the things that are true are not vain dreams of simply conceivable things which never were and never can be realized, but that what has happened or has existed may happen or may exist again, possibly in his own experience. This possibility changes his whole relation to them and leads him to make them vital elements of his own life.

The Society does not fear that true and important things will be found uninteresting. Reason and common sense assert that the contrary is the case. Moreover, actual experience with the films that have been produced confirm the conclusion. Adults and school children alike have sat in wrapt attention before Professor Bagley's pictures of the early French and English explorations and settlements in North America and Professor Atwood's pictures of the development of a glacier. Consequently the Society will limit itself to the production of films showing things that are true and important, and it will produce them in such a way that they will be interesting.

*They must be of artistic merit.* That the true and important and interesting may be and should be of the highest artistic grade needs no argument. It is in harmony with the recent developments in school books, and, indeed, of nearly everything from wrist watches to farm machinery.

*Conclusion.* Films satisfying the foregoing conditions will develop character, and this is one of the chief objects of education. By character is not meant the reputation of an individual or the record of what he has done, but rather his intellectual and moral constitution, that is, the nature of his tendencies under various sets of circumstances. Boys and girls who have seen the history of their country unfold before their eyes, who have had the natural scenery of the whole world brought within the range of their vision, who have seen pictures of all the agricultural and industrial processes essential to modern life, who have witnessed the scope and activities of our government, who have observed the benefits of sanitary living, who believe in their hearts that all that has been shown them is true, who know by their own common sense that it is important, who have found it most interesting and of artistic merit—boys and girls who have had the intellectual experiences these things produce will have character and will become stable and progressive citizens who can be relied on to help do the work of the world in times of peace and steadfastly to support the best ideals of our country in times of trouble.

F. R. MOULTON,  
Secretary.

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# The Film Field

IN response to numerous inquiries from schools having projectors which are forced to stand idle for lack of usable materials, VISUAL EDUCATION hopes gradually to supply information which will enable such schools to get satisfactory programs as they are needed. It is a difficult task which will require much time and effort on our part, and we ask merely patience on yours.

In this issue we list eighteen of the largest exchange systems in the country, with the address of each branch office. These concerns are occupied mainly, of course, with supplying theatrical material to professional exhibitors, but their stock usually includes a small percentage of "educational films." Schools desiring film material may write to the nearest exchange of any or all of the eighteen companies, requesting information available on films suitable for the particular purpose and occasion. (We would caution the school, when such information comes, to make due allowance for advertising phraseology and not to order a film solely on the strength of the company's fluent assurance of its educational worth. Films should be viewed by qualified judges before being shown to school children.)

We also list a few of the many "educational" films now on the market, with the exchanges handling them. When the film is not handled by any of the eighteen exchanges here listed, the name and address of the producer are given.\* If a school wishes to rent one of the films listed with its exchange, it is necessary merely to find the nearest branch of that exchange in the reference list and write for information concerning the film. If the film is not listed with one of the eighteen exchanges, write the producer asking him to name the point of distribution nearest the school.

Constant disappointment must be expected. Often the nearest exchange will not have a print in stock; or the film will be out and unavailable on the date it is needed; or the film will be worn and in bad condition; or the price will be hopelessly high; or the shipment will go astray; or slight attention will be paid to your communication; etc., etc.

In the course of time, however, as we shall be able to add more exchange systems to our reference lists, increase the number of titles in our film lists, eliminate films which have been withdrawn from circulation, and start a section for reviews of important films by the VISUAL EDUCATION staff—a semblance of order and some approach to satisfaction ought to come out of the present chaotic and discouraging situation.

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\*Addresses of producers named in the List of Films in this issue are as follows:  
Atlas Educational Film Co., 1111 South Blvd., Oak Park, Ill.  
Beseler Film Co., 71 W. 23rd St., New York City.  
Carter Cinema Co., 220 W. 42nd St., New York City.  
Educational Films Corporation, 729 Seventh Ave., New York City.  
Eskay-Harris, 126 W. 46th St., New York City.  
Ford Motor Co., Detroit, Mich.  
National Motion Pictures Co., Indianapolis, Ind.  
Underwriters' Laboratories, New York City.  
U. S. Steel Corporation, Empire Building, New York City.  
Scientific Film Corporation, 13 Dutch St., New York City.  
Worcester Film Corporation, 145 W. 45th St., New York City.

# Reference List of Commercial Film Exchanges

(Address all inquiries to the nearest exchange)

## AMERICAN RED CROSS

Atlanta, Ga. .... 249 Ivy St.  
Boston, Mass. .... 108 Mass. Av.  
Chicago, Ill. .... Pioneer Bldg.  
Cleveland, Ohio. .... Plymouth Bldg.  
Denver, Colo. .... 14th and Welton Sts.  
Minneapolis, Minn. .... 423 5th St. S.  
New Orleans, La. Wash'g't'n Artillery Hall  
New York City. .... 44 E. 23d St.  
Philadelphia, Pa. .... 134 S. 16th St.  
San Francisco, Cal. .... 864 Mission St.  
Seattle, Wash. .... White Bldg.  
St. Louis, Mo. .... Equitable Bldg.  
Washington, D. C. .... 411 18th St. N. W.

## FAMOUS PLAYERS-LASKY CORP.

Albany, N. Y. .... 33 Orange St.  
Atlanta, Ga. .... 51 Luckie St.  
Boston, Mass. .... 8 Shawmut St.  
Buffalo, N. Y. .... 145 Franklin St.  
Charlotte, N. C. .... 28 W. 4th St.  
Chicago, Ill. .... 845 S. Wabash Av.  
Philadelphia, Pa. .... 1219 Vine St.  
Cincinnati, Ohio. .... 107 W. 3d St.  
Cleveland, Ohio. .... 811 Prospect Av.  
Dallas, Texas. .... 1902 Commerce St.  
Denver, Colo. .... 1747 Welton St.  
Des Moines, Iowa. .... 415 W. 8th St.  
Detroit, Mich. .... 63 E. Elizabeth St.  
Kansas City, Mo. .... 2024 Broadway Av.  
Los Angeles, Calif. .... 112 W. 9th St.  
Minneapolis, Minn. .... 608 1st Av. N.  
New Haven, Conn. .... 132 Meadow St.  
New Orleans, La. .... 814 Perdido St.  
New York City. .... 729 7th Av.  
Oklahoma City, Okla. .... 128 W. 3d St.  
Omaha, Neb. .... 208 S. 13th St.  
Pittsburgh, Pa. .... 1018 Forbes St.  
Portland, Me. .... 85 Market St.  
Portland, Ore. .... 14 N. 9th St.  
Salt Lake City, Utah. .... 133 E. 2d South St.  
San Francisco, Calif. .... 821 Market St.  
Seattle, Wash. .... 2017-19 3d St.  
St. Louis, Mo. .... 3929 Olive St.  
Washington, D. C. .... 421 10th St. N. W.

## FIRST NATIONAL EXHIBITORS CIRCUIT, INC.

Atlanta, Ga. .... 146 Marietta St.  
Boston, Mass. .... 35 Piedmont St.  
Chicago, Ill. .... 110 S. State St.  
Cleveland, Ohio. .... 402 Sloan Bldg.  
Buffalo, N. Y. .... 215 Franklin St.  
Dallas, Texas. .... 1924 Main St.  
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West Virginia University....L. B. Hill  
Natchitoches, La.  
State Normal School.....L. J. Alleman  
New Brunswick, N. J.  
Rutgers College.....W. M. Demarest  
Normal, Ill.  
Illinois State Normal University....  
Norman, Okla. David Felmley  
University of Oklahoma...J. W. Scroggs  
Philadelphia, Pa.  
The Commercial Museum.....  
Pittsburgh, Pa. Chas. R. Toothaker  
University of Pittsburgh....J. H. Kelly  
Providence, R. I.  
Brown University.....Walter Jacobs  
Pullman, Wash.  
State College of Washington.....  
Raleigh, N. C. F. F. Nalder  
Bureau of Community Service.....  
W. C. Crosby

Reno, Nev.  
University of Nevada.....  
Salt Lake City, Utah. Charles A. Norcross  
Tucson, Ariz. University of Utah.....W. F. Reynolds  
University of Arizona..Frank Lockwood  
University, Ala.  
University of Alabama.....Jas. Thomas  
University, N. D.  
University of North Dakota..A. H. Yoder  
Vermillion, S. D.  
University of South Dakota.....  
J. C. Tjaden

## GENERAL ELECTRIC COMPANY

Boston, Mass.....84 State St.  
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## INTERNATIONAL HARVESTER CO.

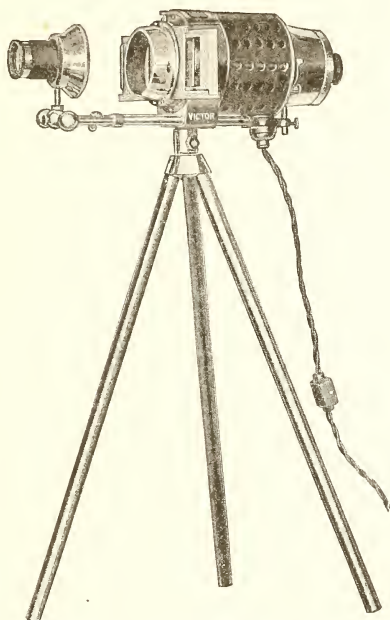
### Distributing Centers

Aberdeen, S. D.  
Industrial & Normal School.....  
Ada, Okla. J. C. Thomas  
East Central State Normal School..  
Agricultural College, N. D. B. A. Pratt  
North Dakota Agricultural College..  
Alva, Okla. R. A. Corbett  
Northwestern Normal School.....  
Ames, Ia. A. G. Vinson  
Iowa State College.....Chas. Roach

(Continued on Page 62)

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# *The* **CLASSROOM STEREOPTICON**



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Bellingham, Wash. Washington State Normal School...J. V. Coughlin	Madison, Wis. University of Wisconsin...W. H. Dudley
Canyon, Tex. West Texas State Normal College...F. H. Ives	Pullman, Wash. c/o State College of Washington....L. R. Lounsbury
College Station, Tex. c/o A. & M. College.....M. L. Hayes	Salt Lake City, Utah. State Department of Public Instruc- tion .....I. B. Ball
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Durant, Okla. Southeast Normal School...E. B. Robbins	Tahlequah, Okla. Northeastern Normal School.....C. W. Prier
Edmond, Okla. Central State Normal School.....J. G. Mitchell	Trenton, N. J. New Jersey State Museum, c/o State House.....Mrs. Kathryn B. Greywacz
Emporia, Kan. Kansas State Normal School.....M. L. Smith	Vermillion, S. D. University of South Dakota..J. C. Tjaden
Kirksville, Mo. State Teachers College.....T. A. Dalton	Weatherford, Okla. Southwestern Normal School.....J. B. Estridge

## List of Films

Produced by various commercial companies and intended for general educational use. All entries are 1 reel (1000 ft.) in length unless otherwise specified.

(In offering these selections, VISUAL EDUCATION in no way guarantees the value or suitability of the films. This can be done only when we have personally viewed the picture. The list represents merely the most careful choice possible to make from data given out by the producing companies. If such information, however, promises to be helpful to schools, these lists can be greatly extended in later issues. Further, VISUAL EDUCATION plans to give brief critical reviews and synopses of important "educational" releases each month, as soon as arrangements are completed with the numerous producers to submit their productions for viewing by our staff. Only the films so reviewed by our staff should be considered as having VISUAL EDUCATION's recommendation, qualified or unqualified as the case may be.)

### TRAVELOGUES AND SCENICS

A NIGHT IN JUNE. (Famous Players-Lasky) A Post Nature Picture.

BESIDE THE GLIMMER GLASS. (Educ. Film Corp.) (Bruce Scenic) A wonderful lake in the far mountains of the west.

THE TRAIL TO THE SKY. (Educ. Film Corp.) A superb scenic of mountains and sky line.

IN SHANGHAI, CHINA. (Beseler) Many interesting views of this city of the Orient.

DUTCH CAPS AND COSTUMES. (Educ. Film Corp.) Dykes, canals, bridges, town halls and many incidentals that constitute Dutch "atmosphere."

FISHING AT OTSU. (Republic) Life and activities of a quaint Japanese fishing village.

THE LAST OF THE SEMINOLES. (Republic) Pictures of the Indians inhabiting the Florida Everglades.

THRU THE ROOSEVELT COUNTRY WITH COLONEL ROOSEVELT. 2 reels. (Hallmark Pictures.)

TWO CITIES OF CATHAY. (Burton Holmes) (Famous Players-Lasky) The ancient cities of Swatow and Amoy.

BANGKOK, THE ROYAL CITY. (Burton Holmes) (Famous Players-Lasky) The city of a million pagodas.

THE CATARACT OF IQUASON. (Burton Holmes) (Famous Players-Lasky) Falls higher than Niagara situated in the jungles of South America.

MARTYRED CITIES. (Burton Holmes) (Famous Players-Lasky).

BATTLEFIELDS OF FRANCE. (Burton Holmes) (Famous Players-Lasky).

ARTISTIC ANTWERP. (Burton Holmes) (Famous Players-Lasky).

IN HAPPY ALSACE. (Burton Holmes) (Famous Players-Lasky).

MAROONED IN THE SOUTH SEAS. (Robertson-Cole) A picture made by Martin Johnson during his year's journey through these untraveled lands.

LOVELY SOUTH PACIFIC MISSIONS. (Robertson-Cole) Photographed by Martin Johnson.

TALES OF THE TALL TIMBER. (Bruce Scenic) (Educ. Film Corp.) Lumbering in northern California and in Idaho.

SUMATRA. (Pathe) Through fields and cities of this Dutch colony.

(Continued on Page 64)



# Some Practical Suggestions In Selecting Motion Picture Machines and Films

## Machine Portability

You will prefer a machine, weighing not more than 25 lbs., which you can carry from class room to class room. The machine goes to the pupils—not the pupils to the machine.

## Machine Construction

Your best investment will be in a well made machine, best for light, best for absence of flicker, best for quiet action and good projection.

## Machine and Film Safety

You will protect yourself from fire hazard and legal troubles by securing a machine and films inspected and approved by all insurance authorities. Look for the Underwriters' inspection label on the machine.

The "New Premier" Pathéscope fully qualifies in all of the foregoing particulars, portability, excellence of construction and safety.

## Film Safety

First and foremost, you will insist on films as well as machines that carry the approval and label of the Underwriters Laboratories of the National Board of Fire Insurance Underwriters. THIS IS PROOF OF SAFETY.

## Film Technique

You will require motion pictures correct in technique, educationally and photographically. They must truly supplement your teaching work.

## Film Value Test

You will choose motion pictures made by experienced and successful producers, pictures approved by the use of the foremost educational authorities.

## Film Supply

You will demand not only quality but also abundant supply. The Pathéscope Exchanges already cover 1,200 of the most select subjects in literature, science, art, travel, history and industry, comprising thousands of reels of film of highest quality. To this list you will add the thousands of new films and new subjects that will be available to you from other Safety Standard Film makers.

## PATHÉSCOPE MEANS

The "NEW PREMIER," easily the leader of all portable projectors.

A comprehensive cinematographic encyclopaedia of choice educational motion pictures.

23 years of cinema supremacy machines and films. Pathé quality. Investigate, then buy the best—buy Pathéscope.

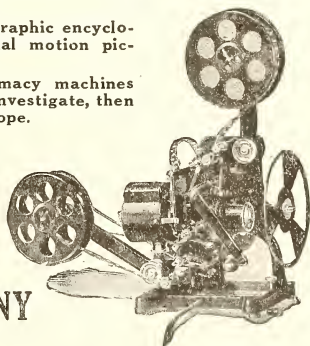
Send for the PATHÉSCOPE illustrated Motion Picture catalogue and the interesting PATHÉSCOPE booklet entitled "Education by Visualization"—The Royal Road to Learning.

# THE PATHÉSCOPE COMPANY

Chicago Office—17 North Wabash Ave.

Film Service at all Pathéscope and other Safety Standard offices in the United States and Canada.

When you write, please mention VISUAL EDUCATION



(Continued from Page 62)

**THE WANDERER AND THE WHOSITT.** (Bruce Scenic) (Educ. Films Corp.) Tramping with two dogs through the Sierra Nevada.

**ON THE FRONTIER OF THIBET.** (Beseler) Views of queer ceremonies and quaint places in this little known country.

**PICTURESQUE CALIFORNIA.** (Beseler) Wonder places in this wonderful state.

**RIVER GRAY AND RIVER GREEN.** (Educ. Film Corp.) Two magnificent rivers beautifully contrasted to emphasize the inevitable moral.

**THE RED HOT SEA.** (Educ. Film Corp.) The Kilauea volcano at Hawaii.

**CAMERARING THROUGH AFRICA.** (Chester Outing) (First National) Views in British East Africa, many of which show native animals.

**PETRIFIED FORESTS OF ARIZONA.** (Republic) A study of the petrified forests and painted deserts of Arizona.

**EVENTIDE.** (Ford Weekly) (Goldwyn) Rivers and clouds and moonlight; exposition of beaver's home.

**MARIMBA LAND.** (Republic) A study of the manners and customs of the descendants of the Aztecs in Guatemala.

**NORWAY, LAND OF THE MIDNIGHT SUN.** (Educ. Film Corp.) Views of interest in the Scandinavian peninsula.

**HISTORICAL ST. AUGUSTINE.** (Pathe) The ancient fortress and other places of interest in this old town.

**208 EVERY SWIMMER A LIFE-SAVER.** (Red Cross) The latest and most approved methods of rescue and resuscitation.

**209 A DAY WITH THE JUNIOR RED CROSS COLONY IN CZECHO-SLOVAKIA.** (Red Cross.)

**206 AMERICA JUNIOR.** 2 reels. (Red Cross) A picture story made in this country.

**THE BOTTOM OF THE WORLD.** (Robertson-Cole) A thrilling record of the voyage of Sir Ernest Shackleton in the Antarctic ocean.

**THE AUSABLE FALLS IN THE ADIRONDACKS.** (Carter Cinema Co.) Life and sports of this scenic region.

**PIKE'S PEAK, THE SENTINEL OF COLORADO.** (Carter Cinema Co.) Wonderful mountain scenery.

**DOWN IN OLD RICHMOND.** (Carter Cinema Co.) Cotton section and southern homes.

**COACHING THROUGH CONWAY IN WALES.** (Carter Cinema Co.) Beautiful scenes of rural England.

**GYPSIES OF THE ARCTIC.** (Educ. Film Corp.) Laplanders, their methods of living, their herds of reindeer, etc.

**CITY OF MEXICO.** (Beseler) Public building and thoroughfares.

#### INDUSTRIAL FILMS

**BUBBLES.** (Ford Weekly) (Goldwyn) An exposition of the process of making soap.

**THE STORY OF ZINC.** (Ford Weekly) (Goldwyn) Mining, smelting and casting zinc.

**SCHOOL DAYS.** (Ford Weekly) (Goldwyn) The place of myriad activities known as the public school.

**DE-LIGHT.** (Ford Weekly) (Goldwyn) The manufacture of electric bulbs.

**JUST KIDS.** (Ford Weekly) (Goldwyn) All the processes involved in the manufacture of gloves.

**TICK-TOCK.** (Ford Weekly) (Goldwyn) The making and assembling of the different parts of a watch.

**HOOPING UP.** (Ford Weekly) (Goldwyn) The nine months process of making a barrel.

**FOUR RUNNERS OF JOY.** (Ford Weekly) (Goldwyn) The manufacture of wheels.

**COAL MINING IN SOUTHERN ILLINOIS.** (Atlas Educ. Film Co.)

**MAGIC CLAY.** (Select Pictures) The Rookwood pottery work shop, Cincinnati, O.

**AIDS TO CUPID.** (Select Pictures) The ages old industry of perfume making in Grasse, France.

**SILKS AND SATINS.** 2 reels. (Bureau of Commercial Economics, Universal) The manufacture of silk from the beginning to the end.

**THE COLOSSUS OF ROADS.** 2 reels. (Universal) The making of freestone cord tires.

**AGRICULTURE IN THE STATE OF WASHINGTON.** (Beseler) Harvesting with tractors; State Fair attractions.

**THE WOOD WORKERS OF ST. CLOUD.** 1/2 reel. (Educ. Film Corp.) The production of beautiful original woodwork.

**TEXTILE INDUSTRY OF FRANCE.** (Beseler) (Reissue).

**HOW PLASTER IS OBTAINED.** (Reissue) (Beseler) Gypsum quarries.

**THE OYSTER INDUSTRY.** (Beseler) The entire process from dredging to sealing the cans.

**FARM INCONVENIENCES.** (Internat. Harvester Co.) A picture demonstrating how lack of system and careless methods will prevent successful farming. Right methods suggested.

**THE EVOLUTION OF HARVESTING.** (Internat. Harvester Co.) From primitive methods up to the modern tractor.

**AMERICA'S GOLDEN HARVEST.** (Internat. Harvester Co.) Reaping and binding and shocking of grain.

**TRACTOR FARMING.** (Internat. Harvester Co.) This picture shows what a tractor, that Jack of all trades, means to a farmer in the saving of labor.

**CANNING—COLD PACK METHOD.** (Internat. Harvester Co.) Food conservation advocated by exposition of various methods of preserving fruits, berries, etc.

**CORN—HARVESTING AND TESTING SEED.** (Internat. Harvester Co.) A picture that should offer many suggestions to a rural community.

**THE SUGAR TRAIL.** (General Electric Co.) A depiction of the beet sugar industry with animated statistics showing the world's production and consumption.

**QUEEN OF THE WAVES.** (General Electric Co.) The history of five hundred years of American navigation.

**THE POTTER'S WHEEL.** (General Electric Co.) The making of electrical porcelain.

**THE ELECTRICAL GIANT.** (General Electric Co.) The manufacture of a 50,000 horsepower steam turbine generator.

**PITTSFIELD WORKS.** (General Electric Co.) A trip through the Pittsfield Works of the General Electric Company.

**BUTTE, ANACONDA AND PACIFIC RAILROAD.** (General Electric Co.) A pictorial record of the Butte, Anaconda and Pacific Railroad electrification through a rough and mountainous country.

**THE APPLE INDUSTRY.** (Beseler) The pruning and spraying of trees; the picking and packing of apples.

**THE MAKING OF A SHOE.** (Beseler) The making of a shoe from cutting out the soles to packing for shipment.

**THE SLATE INDUSTRY.** (Beseler) Quarrying slate, manufacturing school slates.

**INDUSTRIES IN TENNESSEE.** (Beseler) Asbestos quarry; coke industry.

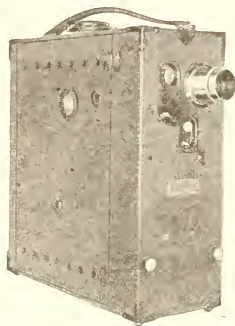
**PUBLISHING THE LOS ANGELES EXAMINER.** (Beseler) Views in every department used in the publication of this journal.

(Continued on Page 66)



## *This Is the Portable Motion Picture Projecting Machine Without an Apology*

# THE American Projectoscope



### **Run It Forward or Backward**

Pictures may be run either way, at will. Simply reverse the motor and repeat any portion desired. This feature is especially valuable in a lecture room, as it permits returning to any point of especial interest, to explain in more detail, without the necessity of rewinding and running the whole film over again.

### **Use It Like a Stereopticon**

The machine may be stopped for a few moments at any picture for a detailed study. This combines the moving picture and stereopticon feature in one machine. The danger of burning the film is negligible as the arrangement of lenses patented in this machine give a cool but strong light. Every device is used to make this machine as fireproof and foolproof as possible.

### **Uses Standard Size Films**

The ordinary standard motion picture films—the same kind used in theatres all over the world—are used in the American Projectoscope.

### **SOME SCHOOLS AND CHURCHES WHO KNOW FROM EXPERIENCE**

Hopewell Township High School, Franklin, Ind.  
City Schools, Warsaw, Ind.  
City High School, Monticello, Ind.  
City Schools, Milwaukee, Wis.  
Humboldt Park School, Milwaukee, Wis.  
State Normal School, Santee, Neb.  
City Schools, Albert Lee, Minn.  
State Normal School, Madison, So. Dakota.  
University of Wisconsin, Madison, Wis.  
State Agricultural College, Ft. Collins, Colo.  
Francis Parker School, Chicago, Ill.  
Clarkson College of Technology, Potsdam, N. Y.  
Loyola University, Chicago, Ill.  
First Baptist Church, Covington, Va.  
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St. Ignatius, Chicago, Ill.  
Plymouth Congregational Church, Cleveland, O.

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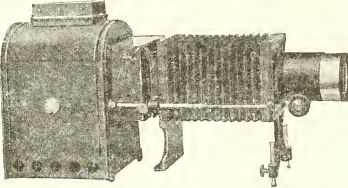
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### McIntosh Educational Slides

are used all over the country. They are listed in four catalogs:

A of Agriculture, S of Science, E of Industries, H of History and Civics. Which do you want?

**McINTOSH STEREOPTICON COMPANY**

E. Randolph St., Chicago, Ill.

(Continued from Page 64)

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**SPRING LOG DRIVING IN MAINE.** (Beseler) From lumber camp to mill.

**THE ASSEMBLING OF AN AUTOMOBILE.** (Ford Motor Co.)

**THE MAKING OF AN AUTOMOBILE PISTON.** (Ford Motor Co.)

### PUBLIC SAFETY

**DANGERS OF THE STREET.** (National Motion Pictures Co.) A film intended to warn children against the dangers of carelessness.

**THE REASON WHY.** 2 reels. (U. S. Steel Corp.) Made by the U. S. Steel Corp. to impress on its workmen the need for observance of "safety first" rules.

**STAKING THEIR LIVES.** (National Motion Pictures Co.) The needlessness of accident, made vivid through pictures.

**THE LOCKED DOOR.** 3 reels. (Underwriters' Laboratories) A picture made in cooperation with the New York Fire Department to promote proper fire protection.

**FIRST AID TO THE INJURED.** (Atlas Educ. Film Corp.) A film giving information that everyone should possess.

**WELFARE WORK OF THE CARNEGIE STEEL CO.** (U. S. Steel Corp.)

**ON THE TRAIL OF GERMS.** (Educ. Film Corp.) Produced under the auspices of the Chicago Tuberculosis Institute.

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**THE VICAR OF WAKEFIELD.** 5 reels. (Pathe.)

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**WILHELM TELL.** 5 reels. (Famous

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Players-Lasky) Schiller's classic filmed where the events occurred and played by Swiss actors.

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**ALICE THROUGH THE LOOKING GLASS.** 3 reels. (Eskay-Harris.)

**GHOST OF SLUMBER MOUNTAIN.** (Republic) A drama of prehistoric animals.

**THE COPPERHEAD.** 5 reels. (Famous Players-Lasky) An intensely thrilling and patriotic story of the Civil War times.

**TREASURE ISLAND.** 5 reels. (Famous Players-Lasky) A Maurice Tourneur production.

**DR. JEKYLL AND MR. HYDE.** 6 reels. (Famous Players-Lasky.)

**THE HOUSE OF SEVEN GABLES.** (Reissue) 5 reels. (Beseler.)

**CINDERELLA.** 5 reels. (Mary Pickford) (Famous Players-Lasky.)

**PUDD'N HEAD WILSON.** 5 reels. (Famous Players-Lasky.)

**PEER GYNT.** 5 reels. (Famous Players-Lasky.)

### BIOLOGY AND NATURAL SCIENCE

**BIRDS OF PREY.** (Educ. Film Corp.) Eagle, vulture, owl and other predatory birds.

**EDIBLE FISH OF THE MEDITERRANEAN.** (Pathe) Weird citizens of the sea.

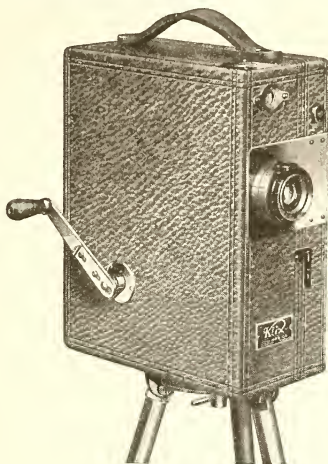
**THE DOG AND HIS VARIOUS MERITS.** (Beseler) Training the police dog, together with pictures of different types of dogs in Holland and Belgium.

**HOW PLANTS ARE BORN, LIVE AND DIE.** (Beseler) A valuable study of general interest.

**THE ORANG.** (Educ. Film Corp.) A Ditmars Studio picture exploiting a most remarkable animal.

(Continued on Page 68)

# THE COMBINED MOTION PICTURE CAMERA AND PROJECTOR



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The complete outfit includes Camera and Projector At-  
tachments, Tripod, Screen, and Electrical Equipment.

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Motion picture supplies of all kinds always in stock. Regular theatre equipment is advised for Educational work wherever a permanent installation is possible.

## Exhibitors Supply Company

Educational Department, 1881<sup>1</sup>/<sub>2</sub> Transportation Bldg., Chicago

(Continued from Page 66)

**THE FRIENDLY BEE.** (Educ. Film Corp.) Hives and bees and their care.

**EVOLUTION AND LIFE OF A SILK WORM.** (Educ. Film Corp.) The various stages from beginning to end.

**WONDERS OF CRYSTALLIZATION.** (Educ. Film Corp.) Microscopic slides of various fluids.

**THE WAR ON THE MOSQUITO.** (Beseler) Draining marshes with pictures of larvae, etc.

**MOLLUSKS.** (Beseler) Sea slugs and other little known sea animals.

**LESSON IN PHYSICS; OXYGEN.** (Reissue) (Beseler) Experiments in combustion, etc.

**REPTILE—PART 5.** (Beseler) Different kinds of familiar and unfamiliar snakes.

**THE BIOGRAPHY OF A STAG.** (Educ. Film Corp.) Written chiefly in the growth of its antlers.

**CAUGHT.** (Ford weekly) (Goldwyn) Hunting of bears; forest fires prevention.

**TROUT.** (Republic) The care of fish by the state fish and game commission.

**BIRDS OF VANITY.** (Educ. Film Corp.) Pheasants and peacocks and other gorgeous birds.

**A VISIT TO THE BRONX ZOO.** (Beseler) Views of many of the animals in this great collection.

**LIQUID AIR.** (Atlas Educ. Film Co.) Experiments showing effects of liquid air upon metals, flowers and living objects.

**ICE AND SNOW.** (Atlas Educ. Film Co.) Power of frost and the formation of ice and snow.

### WEEKLIES, NEWS ITEMS AND REVIEWS

**PATHE NEWS, 38.** (Pathe) Races at

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Louisville; Panama Canal; Uncle Joe Cannon; Military Review by M. Paul Deschanel; Aviation at Mineola, N. Y.; The Lunar Eclipse, etc.

**PATHE NEWS, 37.** (Pathe) New York City; captured German guns; Supreme Council of Italy; seniors at Wellesley; the Pacific Fleet; Centennial in Hawaii, etc.

**PATHE NEWS, 36.** (Pathe) Ceremonies at St. Mark's Square, Venice; the Prince of Wales surf-riding at Waikiki Beach, Hawaii; demonstrations in Ireland; warships back from Cuba.

**PATHE REVIEW, 40.** (Pathe) Pathécolor, Lourdes, the Mecca of France. Barilieu, most famous cathedral in France, grotto of Lourdes, making of cement; Novaglyph film, ball playing. Dittmars film, the southern Mason wasp, glimpses of interior of nest; (cut dance at end).

**INTERNATIONAL NEWS, 18.** (Universal) New York City, opening of ball season; Wyoming, spring lamb round-up; New York volunteers running locomotives to end strike; Proti, in the Sea of Marmora; Searchlight on the Pacific, etc.

**PATHE REVIEW, 33.** (Pathe) Views in France; a lighthouse repair shop; Dittmars film, the ant lion; testing the head resistance of a shell; Novaglyph film; how the champions do it.

**PATHE NEWS, 39.** (Pathe) Celebration of Polish freedom in Detroit, Mich.; new ditching machine attached to locomotive; summer Y. W. C. A. camp on Lake Michigan; Hudson Bay pageant in Winnipeg; loading supplies on U. S. S. Oklahoma, etc.

**PATHE NEWS, 40.** (Pathe) Freight congestion in Detroit, Mich.; fire fighters test new hose in Lawrence, Mass.; join the American Legion; tribute to Joan of Arc

(Continued on Page 70)





## Which Way Are You Teaching?

To teach without using visual education is to walk with one leg—to work with an arm tied behind you. Teach in the up-to-date way. It will pay!

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(Continued from page 68)

in New York City; army air meet at Bolling Field, D. C.; dedication of National Memorial at Arlington, Va., etc.

The Pictographs, produced by Bray Studios, are one reel pictures containing a variety of interesting educational subjects and ending always with an animated cartoon which may be omitted or not as desired.

PICTOGRAPH, 7039. (Goldwyn) The Enchanted Garden—Pictures showing the wonderful flowers in Yosemite National Park. Master Minds of America—Intimate views of Dr. Simon Flexner, the famous pathologist and bacteriologist. Times Have Changed—Cartoon.

PICTOGRAPH, 7038. (Goldwyn) Beating the Landlord—Methods of circumventing high rents. How's Your Eyesight—Technical drawings showing what is wrong with other people's eyes. Jerry on the Job—Cartoon.

PICTOGRAPH, 7040. (Goldwyn) Springtime in Zooland's Nursery—All kinds of babies, feathered, furred and otherwise. A Friend in Need—The work of the "Big Sister" Division of the Traveler's Aid Society. Master Minds of America—Arthur Powell Davis, the great hydraulic engineer.

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## Miscellaneous Notes

(Continued from Page 45)

edge of urgent needs thus revealed the material was compiled.

The technicalities of motion picture exhibition, such as the differences between standard and narrow width film; the adaptability of various currents, and details of actual projection are all explained simply for the benefit of the uninitiated. There is also an explanation of the different machines now in use in the schools. Altogether this is a most valuable collection of information.

★ ★ ★

**C**RITICS have long deplored the growing power of the screen, which on its tidal wave of success threatens to inundate the fields of legitimate drama and completely submerge them. Their fears, sharpened by the merging of the Frohman interests into

the Famous Players-Lasky Corporation, are augmented by the productions of Georg Kaiser, a prolific German dramatist. According to an article in the May 22nd number of the Literary Digest, the technique of Kaiser's dramas is that of the cinema and his influence has already manifested itself on the English stage. "From Morn to Midnight," the first of his plays to be translated into English, shows a number of quickly changing scenes with a marked absence of dialogue and soliloquy. His scenes are not always presented in their logical time order, but are moved about in order to heighten the emotional and dramatic effect. To quote from the Literary Digest: "Just as in the screen play, there is a certain telescoping of emotional effects, which may be used to heighten them, and a speeding up not only of gesture, but of events, so Herr Kaiser rattles through spiritual adventures in disconnected scenes at a tremendous pace. The point is that, though the items in the sum of emotions, so to speak, are added up with the lightning rapidity of an expert ledger-keeper, the total figure works out as large as if the process had been leisurely."

★ ★ ★

**A** NEW course to be given in Teachers' College, Columbia University, is listed as Education 218 and has the title "The Educational Value of Motion Pictures." The course is to be given by Mr. E. K. Fretwell, a professor of instruction in scouting and by Mr. Charles W. Hunt, the principal of the Horace Mann Elementary School. These men are much interested in motion pictures and are going to organize the materials which can be used in the above course of instruction.

A second course in moving pictures offered at Columbia University during the summer is concerned with the making of photoplays. Fundamentals of dramatic construction as applied to the screen, principles of visual appeal, the successful use of motion picture devices, and other "tricks of the trade" are to be a part of

(Continued on Page 72)

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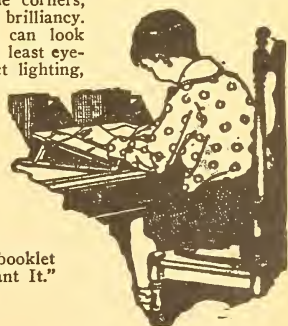


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the course which is given by Rowland Patterson.

★ ★ ★

**A**MONG the interesting new developments in the teaching of geography is a publication by Dr. Wallace W. Atwood of Harvard University, Nellie B. Allen of Fitchburg, Mass., author of "Geographical and Industrial Studies," and Edward K. Robinson. These authors have developed a device, which is shortly to be published by Ginn and Company, by which a pupil not only fills in a printed outline map but himself draws the entire map, thereby emphasizing his visual impression of the outlines of continents, countries, and states, in a way that has not been possible when pupils have merely filled in printed outline maps.

Another valuable feature in connection with this publication is the correlation of history with geography. At the present time most outline map work provides the teacher with no definite course to be followed. This new series provides a very definite outline accompanying the maps, and a generous number of geographical games and devices which Miss Allen has developed and accumulated during her experience as a teacher in the Fitchburg (Mass.) Normal School. The work is divided into two parts. The first, Practical Map Exercises in Geography and History—Western Hemisphere, is to be published in June. The second part covering the Eastern Hemisphere in the same way will be published in the fall.

**Did You  
Notice the Slip  
on Page 39?**

When you write, please mention VISUAL EDUCATION

# VISUAL EDUCATION

A Magazine Devoted to the Cause of American Education

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Vol. I.

SEPTEMBER-OCTOBER, 1920

No. 5

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## In This Number

Visual Education as a Constructive  
Force in Industry

*H. L. Clarke*

Teaching English to Foreigners  
Through Motion Pictures

*C. L. Hultgren*

How North Carolina Uses Motion Pic-  
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System

*F. A. Olds*

The Woman's Club and Its Attitude  
Toward Visual Education

*F. B. Blanchard*

Motion Pictures in the Toledo Museum  
of Art

*E. L. Anderson*

Visual Material: Spur or Sedative

*L. C. Everard*

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## "Bonds—Questions Answered—Terms Defined"

of interest and value. In its twenty-six pages are discussed the questions which our extended experience has shown are those most frequently asked by bond buyers. Its contents also include non-technical definitions of the most commonly used bond terms.

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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President

FOREST R. MOULTON, Secretary

HARLEY L. CLARKE, Manager

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VOLUME I ✓

SEPTEMBER-OCTOBER, 1920

NUMBER 5

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CHICAGO, ILLINOIS

# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

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Volume I

SEPTEMBER-OCTOBER, 1920

Number 5

## Editorial

OWING to the shortage of print paper—a condition that is working loss and embarrassment to the publishing trade the country over—there has been an unavoidable delay in issuing this copy of VISUAL EDUCATION. In consequence, it has been found advisable to consolidate the September and October numbers, and to extend subscriptions and advertising contracts one month by way of making adjustment.

It is comforting to reflect that a sufficient supply of stock is now in storage to take care of our paper needs for the remainder of the year. Readers may be assured that VISUAL EDUCATION will make its appearance regularly from this time forth.

AMERICA, land of opportunity, has, for at least twenty years, been missing priceless opportunities.

Every day that slips into the past carries significant events of world history into the limbo of the irrevocable. Persons, things, acts and occasions are seen by a few eyes at the moment of

their living actuality, and then must take their place forever in history, imperfectly preserved in the transient memory of witnesses, in printed words of inadequate description, and in still pictures that record only frozen moments in the march of an event that lived and moved. Yet we have at hand an instrument that will preserve for all time a good fraction of what has occurred since the 20th century began, and practically everything of real significance that will take place throughout the world in all the years to come.

By way of illustration, consider the titles of these old Edison films, made between 1900 and 1905, which George Kleine—a pioneer in motion pictures who never has lost the vision of the serious values obtainable from the great invention—recently had unearthed. These are selected at random from a collection of 179 similar subjects:

Mount Pelee, smoking before the eruption.

Eruption of volcano and destruction of St. Pierre.

President McKinley's funeral.

Skirmish between Russians and Japs.

Panorama of Culebra Cut (while canal was building).

U. S. troops landing at Daiquiri, Cuba.

Galveston Flood. Search for bodies in ruins.

The aeroplane "June Bug."

Opening of the New York Subway.

Seeing New York. (These views taken at the beginning of the century would make interesting viewing at the end of it.)

What magical possibilities for preserving the past are here suggested! In the days when these films were made, motion cameras were few and their work sadly inferior to results achieved within a decade afterward. Today perfected cameras are everywhere. Very few notable events of the world escape the omnipresent lens. Out of the vast amount of footage taken since 1900, millions of feet still exist containing priceless records. It is futile to attempt an evaluation of the output of coming years.

Such material should be recognized as a national asset, invaluable and irreplaceable. Celluloid is perishable. This great record of world activities being made daily by the motion picture is doomed to destruction after its present prescribed course is run, unless steps are taken to preserve it.

Will America stand by and watch this heritage pass away?

What the Library of Congress has done and is doing for books, a like institution could do for films. The two problems would be quite similar, save in two details. The storage vaults for film will differ fundamentally from the book stacks, and the studio for reprinting aging negatives will replace the bindery. The initial

cost would be heavy, the upkeep equally so; but America is blessed beyond all other nations in the ability to afford any cost which value received will justify.

---

**F**ORMAL education, in the modern world, has been going on for something over a thousand years. Its beginnings under Charlemagne were humble; its early steps, painfully slow; its whole progress down to the present day has been unduly sluggish because of the innate quality of the academic mind, which insists upon being over-sure of the value of a change before making it.

The "thousand years" fall readily into three periods of very unequal length: the period of the *listening ear*, the period of the *reading eye*, the period of the *seeing eye*. The first period was seven or eight centuries long; the second, three or four centuries; the third, a score of years or so.

In old eighth-century Alcuin's day, and for nearly eight hundred years afterward, teachers spoke and pupils listened. Crinkled parchments and dog's-eared manuscripts, written by the hands of monks long dead, were too rare and precious for use by any but the little company of learned men. These masters were, therefore, the oracles for the masses—the only source of learning, outside personal experience, for the rank-and-file of humanity.

The medieval university consisted of a lecturer on a grassy knoll with his listeners seated on the ground around him. The eminence of the speaker and the carrying power of his voice determined whether the listeners numbered

scores, or hundreds, or thousands. Often the university moved indoors under the shelter of any roof available. Gradually special buildings came to be erected for the purpose and the name "University" took on a more concrete meaning. The manuscripts were given homes to insure the preservation of their priceless contents. Thus libraries were born. All this spelled progress. Yet educational method remained the same: oral expression by the teacher, aural acquisition by the taught. Those long twilight centuries, from the eighth to the fifteenth, were the period of the *listening ear*.

\* \* \*

Printing came—in the fifteenth century—and the world fell to reading. The sense of sight began to dominate the field of formal education. Sources of knowledge suddenly multiplied ten thousandfold. The manuscript in the medieval library had been inaccessible to the world save through the medium of the teacher's voice, and for a few learners to master the contents of a single document required many lectures extending over many days. Once printed, however, that same document could become the intellectual possession of tens of thousands in a single day. What printing did for the speeding-up of education can never be calculated.

This was the period of the *reading eye*, and it extended, we may say, from the fifteenth century to the days of our own childhood. It marked a great advance over the preceding period. The printed copies of one or two great books have doubtless exerted a mightier influence upon the human mind in total than did all the lectures of all the lecturers of the Dark Ages. In the first period, the ears of thousands were serv-

ing the cause of education; in the second period, the eyes of millions.

Yet the eye served only to scan the lifeless page, to translate to the brain printed words which were in themselves but inadequate symbols seeking to convey realities. Between the mind and the truth stood always the double barrier of verbal description by the writer and visual translation by the reader. Each intermediate step was inevitably fruitful in error and distortion. This is still the case, and always must be as long as men write books and other men read them; for what is written in a book is not necessarily true, and what we read in that book is not necessarily what was written there. Throughout the whole period of the *reading eye*, formal education has been thus handicapped, even down, to our own day.

\* \* \*

We have reached today the third period of the thousand years—the last, and unquestionably the greatest, of the three. Educators are fortunate indeed to be living their little spans just at this moment in the march of time. We are scarcely over the threshold of the period, and no one can yet know the vastness of the opportunity that is opening before us. It is a momentous time. World movements just born have the helplessness characteristic of all new life. There is great need of our care and attention. Some of us will do our utmost for the newcomer; some of us will conscientiously try to hinder its growth; most of us, unfortunately, will have to wait some years more to realize what is going on. This regrettable fact, however, makes little difference after all. Most of the world is asleep at the hour of dawn. Few see the sun rise, but so far it has never failed to rise,

and the new day comes whether man is watching for it or not.

Visual instruction is the keynote of the new education. The complete understanding of realities, physical and intellectual, is the end of formal education. This end is attainable only through our five senses. Obviously, we should use the sense that enables us to approach most nearly to the actuality of the thing being studied, avoiding as far as possible all intermediate steps in the approach. If it is odors we are studying, we should use our sense of smell; if flavors, the sense of taste; if sounds, our hearing; if surfaces, our sense of touch. For these special subjects the senses named give immediate and direct contact between the student and the reality he seeks.

Such fields of study are, however, exceedingly limited. The total data gathered by these four senses can rarely

give a complete concept to the mind. Allow a student the freest possible use of his nose, tongue, ears and fingers, and how pathetic will be his resulting concept of a rose, a cloud, a locomotive, the ocean, or a mountain-range! Give him his eyes, with the other senses as contributory aids, and man can gather all the material the natural world affords. This material, digested and assimilated through the processes of research, discussion and reflection, becomes the mental nourishment of the world intellect.

The period of the *seeing eye* promises to develop the most perfect education yet achieved. This is truism rather than prophecy. During this period the race will advance with swifter stride than ever before along the path to final mastery of all things, which we like to believe is the ultimate heritage of man.

## De Maupassant on Visual Education

(Written about 1850)

From "How He Got the Legion of Honor"

**H**E wanted gratuitous theatres to be established in every poor quarter in Paris for little children. Their parents were to take them there when they were quite young, and, by means of a magic lantern, all the notions of human knowledge were to be imparted to them. There were to be regular courses. The sight would educate the mind, while the pictures would remain impressed on the brain; and thus science would, so to say, be made visible. What could be more simple than to teach universal history, natural history, geography, botany, zoology, anatomy, thus?



# VISUAL EDUCATION AS A CONSTRUCTIVE FORCE IN INDUSTRY

BY H. L. CLARKE

President, Utilities Development Corporation

THE boys and girls of today are the workers of tomorrow.

What we sow this year in the schoolrooms of America, we shall reap a few years hence in the communities of America.

There are certain studies that teach facts and standards of vital importance to the well-being of nation and individual—studies that help to make better citizens and better men and women. Foremost among these essential studies are American history and government, geography and industry, sanitation and hygiene. On these fundamental subjects, therefore, the Society for Visual Education is building the first of its film courses. The more the grades are able, by utilizing the teaching power of the screen, to increase the amount and effectiveness of the instruction given in these essential subjects today, the better will it be for community and citizen tomorrow.

So much for the future citizen and his present needs.

## FILM EDUCATION FOR ADULT WORKERS

What of the citizen of today?

Is it good business to withhold from the men and women already enrolled in the army of industry this same valuable teaching our future

workers are receiving in the things that go to make better citizens and better employees?

That many private employers realize it is poor business to neglect the education of the adult citizen, is proved by the generous sums large industrial concerns are appropriating for their own industrial education departments. Whatever it may cost to improve the morale of their workers, they look upon the investment as one they cannot afford to sidestep.

## DIPLOMACY OF SCREEN TEACHING

The best education in industry is that which stimulates a workman to produce more for both himself and his employer. The ideal way to impart such an education is by means of the screen. It is a thoroughly tactful way. It does its work without creating antagonisms. Whether schoolboy, schoolgirl or factory worker, few will pick a quarrel with the motion picture's story, provided only it is the truth. On the other hand, the same positive information coming from a lecturer is likely either to fall on deaf ears or to provoke resentful and often dangerous argument.

## A DIVIDEND-PAYING METHOD

Again, it is well known that a far greater percentage of people see alike

than hear alike. Also there is the inescapable fact of time saved and vividness gained by taking advantage of the screen's power to tell much in small compass, and to tell it in such a way that the knowledge sticks.

It follows, therefore, that industrial education by the visual method comes nearer than any other way to accomplishing the desired results. It economizes time, it makes for uniformity of impression, and it provokes little antagonism. It is obvious that visual methods — especially where there is only a limited knowledge of English, as in the case of the foreign labor so largely employed in our factories and mines—will materially increase the rate of return on the money invested in industrial education.

#### APPLICATION TO INDUSTRIAL PROBLEMS

The Society for Visual Education is developing films to portray all phases of the safety problem. It is endeavoring to picturize many other phases of the industrial problems that affect railroad, store and factory. Films are being designed to trace the course of freight from consignor to consignee, bringing out the vital nature of each single step in the journey, and emphasizing the obligation of every employee to perform each duty well and thoroughly, lest one instance of carelessness or neglect clog an entire division of a huge railroad system.

There are still other films planned to show how little mistakes in great

mercantile houses may be rectified, and how various raw materials are converted, through a long series of factory processes, into valuable manufactured products.

Manufacturers tell us that it is becoming increasingly important for each worker to know what his fellows are doing. The right sort of motion pictures will make every worker sense the inspiring fact that he is a fundamental and essential part of the organization.

#### COMBATING THE BOLSHEVISTIC IDEA

One purpose of the Society for Visual Education in its series of industrial studies is to show that combination and organization of capital are necessary; that any man may draw against capital just to the extent that he is willing to pay in energy and education. It is important for every citizen to have a correct understanding of the nature of invested capital and of the functions of capital. Films of the truly educational sort can visualize the vital relations of capital to other business. They can show that surpluses, large or small, most frequently represent land, buildings, machinery or other equipment, all of which are responsible for the continued earning power of the corporations, and none of which may be disturbed or distributed without destroying that earning power.

If we can impart these truths in some small measure to the workmen of America, surely great and lasting good must result.

# MOTION PICTURES IN THE TOLEDO MUSEUM OF ART

BY EULA LEE ANDERSON  
Museum of Art, Toledo, Ohio

THE child of today is the man of tomorrow, and the richer and finer his education, the better citizen will he make for his country. To appreciate the fine arts, a love for them must be instilled in the child as soon as he reaches school age and this development must parallel his general education.

Art in the public schools is taught in a very limited way and one which makes little appeal to the average child. Realizing this need of our future citizens, the Toledo Museum of Art is endeavoring to lay a foundation in art appreciation. It is offering to the little Museum visitor the advantages of the story hour, the gallery talk, the music hour, classes in pure and applied design, and the educational motion picture.

## BRINGING THE CHILDREN WITHIN REACH

Interest in visits to the Museum was first stimulated through the medium of an organized bird club. The children were taught to feed, protect and save the birds, and were given plans for the building of bird-houses which they were urged to bring to the Museum. That brought the boys and girls in crowds. An exhibition of their work was later held at the Museum, and 3,000 of the cleverly made miniature houses were placed in the parks and along the highways. Many girls and boys who perhaps had never before heard of the Museum or might not

otherwise have been interested enough to give up part of their play-time to visit us, thus learned of its location and fascinating contents. Thousands have also been brought to the Museum during the past four years by means of the annual vegetable and flower shows in which the children have participated.

## THE LURE OF MOTION PICTURES

The Toledo Museum was the first to include motion pictures in its educational plan when, in the autumn of 1915, the necessary equipment was presented through the efforts of H. Y. Barnes, then assistant to the Director. This proved not only a further magnet to attract boys and girls to the Museum, but a further means of teaching art. During the first few years films dealing with travel, crafts and art were quite difficult to secure; yet by diligent search many fine things were made available, including the Life of Pallas, the famous potter, and a beautiful hand-colored film showing the making of silk. The policy of the Museum is not to amuse by means of the film, but to educate the child along artistic lines, using only such productions as are of a distinctly cultural quality.

## EDUCATIONAL PURPOSE OF MUSEUM

It is the aim of this institution to show pictures that supply background and atmosphere to its collections, stimulate interest in them, correlate with Museum activities, and are generally educational in content and plan. Since the pioneer days of the motion picture

in the Toledo Museum, film producers have shown a marked improvement in the character of their product, so that it is now possible to obtain films on art, history, literature and nature study with far greater ease than formerly.

During one season a series of stories on Egyptian art, illustrated with lantern slides, was presented to the chil-

docents. Their duties are to act as guides to adults and other children visiting the Museum galleries.

The illustrated music hour is an important factor in the Museum's educational work for children. This instruction, like all other Museum activities, is free. Once each month themes from a great opera are played and slides de-



ONE REASON WHY THE TOLEDO ART MUSEUM BELIEVES IN EDUCATIONAL "MOVIES"

dren. At the same time moving pictures were projected, showing the Nile valley, the pyramids, temples and other remains of ancient Egypt. Another series was based on Greek art and mythology, and for this films were secured showing ancient Greece with its scenes of historic and artistic interest. Motion pictures were shown on Babylon, Assyria, Japan, China, India and Italy, always keeping in view the purpose of awakening interest in the Museum's collections.

Through the medium of the motion picture and the story hour Toledo boys and girls have become so familiar with our collections that many have been made members of the Staff of Assistant

picting scenes therefrom are thrown on the screen.

#### THE EDUCATIONAL MOTION PICTURE

During the past year 70,000 children have attended our various activities. Short visits do not suffice for them; on Saturdays many bring their lunches and remain for the day. So great are the numbers thronging to see the moving pictures, that we find it necessary to run our films two or three times on Saturday and Sunday. *Such attendance records certainly disprove the statement, so frequently heard, that the child prefers the sort of entertainment provided at the ordinary motion picture theater to pictures of a strictly educational nature.*

# THE WOMAN'S CLUB: ITS ATTITUDE TOWARD VISUAL EDUCATION

BY FLORENCE BUTLER BLANCHARD

Chairman Motion Pictures, General Federation of Women's Clubs

THE woman's club is one of the most important factors in the community life of America. It has grown out of a common desire among women for recreation, self-improvement and free discussion of things that are happening in the world; it has grown out of their longing to be of real service to their community and the world at large.

Women's clubs have evolved from the "quilting bees" and "apple peelings" of long ago into societies which take up the study of literature, history, art, political economy and other subjects. They devote themselves not only to research work, but to the active performance of civic duties and other community obligations. Only after many years of getting together and talking things over has the club movement taken an active stand on questions affecting municipal,

county, state and national questions.

Today all the clubs are combined in various federations—city, county and state—with nearly all of these, in turn, under the General Federation.

## RESOLUTION

Whereas, The great popularity of the Motion Picture, growing out of the fact that eighty-five per cent of our thinking is in terms of visual images, has demonstrated the unlimited power of the Motion Picture in leading the mind of the child and influencing it for good or evil, and

Whereas, The Society for Visual Education, composed of many of the foremost educators of America, has devised a system of Motion Pictures for strictly educational use, such pictures being closely articulated with the courses of study in our public schools, and designed to make clear and vivid in the mind of the pupil the cold abstractions of the printed page, and

Whereas, Such an association of educators is capable of fully and properly developing the educational possibilities of the Motion Picture, without permitting it to become a mere amusement device or to be more actively harmful in disseminating false ideas and false standards, be it

Resolved, That the General Federation of Women's Clubs, in Convention assembled, heartily endorse the efforts of the Society for Visual Education, and that we offer it our earnest support in its sincere endeavor to utilize fully and properly this most potent educational force.

Resolution Adopted by the General Federation at Its Biennial Convention, Held in Des Moines, Ia., June 16-23, 1920.

Published in the General Federation Bulletin for August, 1920.

## VITAL HOME QUESTIONS

Among the questions which figure on the programs of these progressive clubs are subjects touching every phase of the home life of America. Such questions are given much time, thought and investigation, because the declared purpose underlying the entire woman's club movement is "to bring women together for the promotion of higher intellectual, social and moral conditions."

These vital subjects have been presented to the clubs by the best-known authorities; and because of the high regard in which the opinion and the influence of clubwomen are held, nearly



every ill that our country has developed or inherited has at one time or another been brought before them, and they have been asked to investigate and co-operate with the agencies working for betterment.

#### MOTION PICTURES AND EDUCATION

Education, for example, in its broadest aspects, is a matter of supreme interest to women's clubs. The recent movement to introduce a greater degree of visual instruction into American schools makes a particular appeal to them. There is general agreement—not only among educators, but among all who take intelligent interest in this vital problem—on the following points: (1) that the greater part of life-long education is achieved through the eye; (2) that only a fraction of this total process takes place in school; (3) that, outside of the school, the greatest single influence that is today being exercised over national intellect and instincts is that of the commercial "movie." Obviously, this is a situation deserving the most earnest consideration and energetic action. More and more, therefore, our women's clubs are enlisting for this great work.

#### THE COMMERCIAL "MOVIE"

The commercial motion picture thrust itself upon the clubs with the swiftness of a forest fire. It made such astonishing headway that it had reached a point almost beyond control long before some of its baleful influences were discovered. It had, in fact, sprung into favor almost overnight. So attractive was this novelty and so low the price of the entertainment, that as far back as 1914, going to "the movies" at least once a week had become a fixed

habit with nearly every man, woman and child in our land.

The attention of the women's clubs was directed to the fact that much of what was being nightly absorbed at the motion picture theater was in complete disagreement with the ideals of American life and to a startling degree harmful to our children. Therefore, in hundreds of cities throughout the country, the clubs appointed committees to review pictures and conducted special showings of really good pictures, for which they themselves sold tickets. In every possible way the clubwomen have co-operated with exhibitors to raise the standard of pictures, but all with most inadequate results so far as any definite improvement in the general character of films exhibited is concerned.

#### STATE FILM SURVEYS

The motion picture became such a burning question that in 1916, when the General Federation held its biennial convention in New York City, a special chairman was appointed and state surveys were recommended. The states and cities making these surveys found such disturbing conditions and such an alarming attendance of children of school age, that when the General Federation met again at Hot Springs, Ark., in 1918, it unanimously adopted a resolution setting forth the character of the films that were being exhibited; the fact that the educational value of the motion picture was being seriously endangered; that the voluntary system of censorship and review had proved insufficient, and that adequate censorship called for constant application and legal authority. It recommended that the women of the various states exert all possible efforts toward extending the

area protected by law from harmful films — Pennsylvania, Ohio, Maryland and Kansas being at this time the only states with legal censorship.

#### CENSORSHIP

The women's clubs took a firm stand for censorship of motion pictures, not only because they knew many of the unprintable facts regarding the making and exhibiting of unclean motion pictures—not only because of the harmful influence such films exert upon the adolescent and even the adult—but because they realized fully the impossibility of “cleaning the screen” without the help of those in authority. The women's clubs do not assume the responsibility for the enforcement of laws; they feel that that duty devolves upon the legally elected or appointed officers of the state or community.

While they have not yet succeeded in extending the area which is protected by law from the influence of harmful films, the clubs are still hopeful and still working, knowing that films are still unimproved morally to any appreciable degree, and that legislatures still meet in annual or biennial sessions.

#### WHAT THE CLUBS ARE DOING

As part of their activities in the motion picture field, the women's clubs are searching out the things that need to be done in order to preserve the high standards for which this country is honored: clean manhood, fair dealing, protection of the weak, respect for womanhood and for law and order. They are agitating and giving publicity to all movements for film improvement, by every means at their command. They are opposing the use of the screen to degrade women; to instruct in crime; to ridicule law and order; to portray

the American home and the American public in an untruthful manner, and by so doing instill false standards in the minds of our future citizens. They are endeavoring to secure laws that will empower those in authority in each state to inspect every film before it may be exhibited in that state.

#### VISUAL EDUCATION ENDORSED

When, at the 1920 Biennial held at Des Moines, the General Federation adopted the resolution that is here reprinted, endorsing the plans of the Society for Visual Education and offering its earnest co-operation in furthering the work, it marked the beginning of another epoch in the motion picture activities of the women's clubs of America. We have known full well that some day the motion picture as a school aid would be thoroughly tried out. Now that the day has come, we are ready to help the schools take full advantage of their new opportunity.

The clubwoman has long been an ardent believer in the efficiency of visual education. Hasn't she lived with her children, the best posted of movie fans? Every motion picture chairman has been deluged with letters demanding lists of pictures for educational purposes. Up to the present year, however, little progress has been made in the direction of motion pictures for schools.

We are ready to give our help now because we feel that the program presented by the Society for Visual Education—directed, as it is, by the prominent educators whose names head the several courses—guarantees the quality of the matter that is to be put into these films. As our interest is always keen in anything that touches the

schools, we are ready to give this movement every practical assistance that lies within our power. If it develops anything like the possibilities we vision for it, the motion picture as an aid to better school work will be reasonably well established when our next biennial convention assembles.

The writer believes she is voicing the unanimous opinion of the clubwomen

of this country in saying that they will continue to support all reasonable movements for censorship, because they are fully aware of the dangerous influence of the uncensored film. Aware as well that the motion picture presents a wonderful medium of education, distinct and apart from the entertainment film, they will enthusiastically support the visual education movement.

## WHAT SCHOOL SUPERINTENDENTS THINK

THE eye is the strongest of the senses and the widest avenue to the brain. We are eye-minded more than ear-minded. Therefore we love to see things. Any kind of visual education simplifies the problem of understanding. All educators will welcome the day when education through vision dominates all teaching processes.

*Lawton B. Evans  
Augusta, Georgia*

NO superintendent acquainted with the simplest facts of psychology can consistently ignore visual education. The truth is that for generations we have talked children to death in the school room, in spite of the fact that for years we have generally understood that most children get a clearer perception and have more lasting memories of what they see than of what they merely hear and read about. When visual education is as well adapted to the course of study we wish to teach as it is to the psychology of the child it will revolutionize teaching.

*J. O. Engleman  
Decatur, Illinois*

VISUAL education will shorten the time that it takes a child to gain information, but lengthen many times the period for which he will retain it.

*Z. C. Thornburg  
Des Moines, Iowa*

SINCE impressions through the eye are so much more effective than those through the ear, too much emphasis can not be placed on visual education.

*Charles Baker  
Andalusia, Alabama*

THE value of visual instruction by means of diagrams, models, pictures, slides and films, can not be estimated. It is the most direct, therefore the best, method of imparting knowledge to students.

*Ernest Berry  
Mt. Ida, Arkansas*

THE Los Angeles City School Department recognizes the tremendous value of visual education to the extent of assigning an elementary school library assistant to a full time assignment upon visual education. It is our intention during the coming year to extend this very important subject to the fullest possible extent in elementary, intermediate and high schools.

*Robert Lane  
Los Angeles, California*

VISUAL instruction is the most practical and permanent form of instruction. I want to see it used much more extensively than it now is.

*Howard T. Ennis  
New Castle, Delaware*

SINCE three-fourths of all the sense perceptions come through the eye, visual education can not be too much emphasized. Any aid to seeing the material of instruction attractively, vividly and accurately is an invaluable reinforcement to the text.

*M. A. Cassidy  
Lexington, Kentucky*

VISUAL instruction should more than double the effectiveness of teaching. The greater the number of senses appealed to, the deeper and more lasting is the impression, and the clearer and more spontaneous the recall.

*Charles Bickford  
Lewiston, Maine*

NINETY out of every hundred of us are eye-minded, yet we have educated as if the reverse were true. Visual education follows the natural order.

*Frank A. Gause  
Bay City, Michigan*

THE present movement for emphasis on visual education is one of the most important in many years. It will do more than anything else to prevent mere memory of words without the proper association of ideas in education.

*L. McCartney  
Hannibal, Missouri*

WE are using slides and motion pictures extensively in our school work. We are awaiting very anxiously the coming of actual text-book work in this line. Why are school folks so slow in recognizing this wonderful opportunity for using the most susceptible of the five senses?

*A. J. Stoddard  
Beatrice, Nebraska*

VISUAL instruction must make better teachers and more alert pupils than any other form of instruction now in use. Geography, history and civics will in the near future be taught largely by visual method.

*Herbert Taylor  
Manchester, New Hampshire*

THE value and importance of visual education are very great. Impressions received through the eye are clearer and more lasting than those received through the ear. The possibilities of visual education include not only an expansion of the field, but a revolution in methods of instruction in the schools. Personally, I am enthusiastic about the future in this field of activity.

*David B. Corson  
Newark, New Jersey*

THE importance of visual instruction in the field of modern education can not be overemphasized. No superior method for vitalizing much of the subject matter which it is essential to teach exists.

*L. F. Hodge  
Yonkers, New York*

ACCORDING to the psychologist, 80 per cent of our education is received through the eye. Visual education is opening up a field of experience to the child to whom heretofore we have appealed through reason and reflection upon a world that he doesn't know.

*M. K. Weber  
Asheville, North Carolina*

OF the five human senses, I believe that the sense of sight is the chief one on which the human mind during infancy and early childhood relies for the accumulation of knowledge. The children in kindergarten and in the grades or common school would learn a great deal more than they now do and, furthermore, they would gain a more correct and better grounded understanding of what they now learn, if visual instruction (motion pictures and other pictures) were employed to reinforce what they have been taught in the now prevailing methods of teaching.

*P. J. Iverson  
Lakota, North Dakota*

IN my judgment there is a great field opening in the schools for visual instruction. It will speed up the process of learning and give new interest and zest to the work of the schools.

*S. H. Layton  
Altoona, Pennsylvania*

# HOW NORTH CAROLINA USES MOTION PICTURES IN ITS SYSTEM OF COMMUNITY SERVICE

BY FRED A. OLDS

North Carolina Historical Commission

**N**ORTH CAROLINA has struck a new note in its County Unit System of Community Service. Three agencies combined to bring this about: first, W. C. Crosby, director of the service and originator of the plan; second, Governor Thomas Walter Bickett, who had the vision to recognize the great possibilities of this plan for bringing visual instruction to rural communities; third, the legislature of 1917 which, acting upon Governor Bickett's recommendation, appropriated \$25,000 to meet the state's share of the cost.

The Bureau of Community Service was organized in 1916, under a voluntary arrangement entered into by the State Departments of Education, Health and Agriculture; the State College of Agriculture and Engineering; the State College for Women, and the State Farmers' Union. It has now been made a division of the State Department of Education, with the Departments of Agriculture and Health co-operating.

The law enacted declares itself designed to improve the social and educational conditions of rural communities through a series of entertainments, consisting of moving pictures selected by the Department of Public Instruction for their entertaining and educational value. A third of the expense of these entertainments is paid by the State Board of Education out of the annual

appropriation of \$25,000, under the direction and supervision of the State Superintendent.

The first county test was made in Sampson county and the first exhibition of state pictures was at the village of Mebane, Governor Bickett, Mr. Crosby and J. Y. Joyner, then State Superintendent, being present.

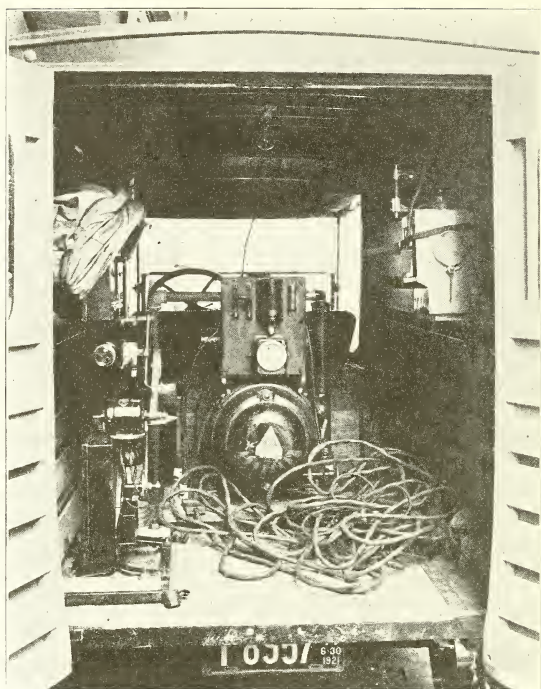
## ORGANIZATION AND EQUIPMENT

The tests showed that the only way in which the service could be given cheaply enough to bring it within reach of the average rural community was to make up complete portable operating units which could be assigned to definite circuits. It was found best to limit each circuit to a group of communities within a single county. The operating units consist of a motion picture projector, a Delco light plant, and other necessary equipment, all mounted on a  $\frac{3}{4}$ -ton truck with panel body. The photograph shows fairly clearly the arrangement of one of these "movie trucks" of North Carolina.

The uniform plan of organizing county circuits is to choose at least ten communities as centers, so located as to be accessible to the largest possible number of people, the selection being governed also to some extent by their strategic importance in the event of future school consolidation—something for which the state is striving steadily.

As already stated, under the terms





INTERIOR VIEW OF ONE OF NORTH CAROLINA'S  
"MOVIE TRUCKS"

of the legislative act the state pays one-third of the cost and the community two-thirds. It has been found that the total cost of the service per person attending, based upon the school population of the centers served, is fifteen cents. To raise its necessary two-thirds the community is instructed to charge ten cents admission for each person over six years of age, there being no half-rate. No donations are accepted from public-spirited citizens or other sources, the fundamental object being to bring the people together in community meetings rather than to give financial support to the work. This plan likewise puts the project on a

competitive basis, because there are always more communities and counties desiring the service than can be served with the present limited appropriation.

While no county has less than ten centers now enjoying this service, some have as many as twenty. When an application comes from a County Board of Education, it is carefully investigated; and if it is found that the spirit of the people is such as will ensure success, a complete operating unit, owned by the State Board of Education, is placed in the county with a mechanic to operate it. It is in general charge of a "County Director of Community Service" and under the joint super-

vision of the County School Superintendent and the State Bureau of Community Service.

#### TRAINING OF DIRECTORS

The county directors are women selected by the County Superintendent for special fitness and approved by the State Department of Education. Each directs all the community center activities in her circuit of communities, including plays and games in the school, story-telling, community organization and junior citizenship, as well as the regular community meetings and moving picture entertainments.

For these county directors and other community workers, a ten-day course of instruction in a "Community Service School" was given this summer at the University of North Carolina, under the direction of Mr. Crosby. At this school, the first of the sort ever conducted, daily speakers took up various angles of the great subject of mass education through visual interest.

#### HOW MEETINGS ARE CONDUCTED

Where there are ten community centers there will be two meetings each month. At each meeting there is a new picture program of six reels, half an hour or less being given over to the discussion of community problems and matters of timely interest.

At first all films were rented, but this plan was not found to answer. The direct purchase of all films, after careful inspection, has proved the only possible solution. Of the six reels shown, two, for example, will treat dramatic or historical subjects, two purely educational subjects, and two be simply good, wholesome comedies.

The machines for projecting are light and can be used in any building; the truck is attractively painted and lettered as the property of the State Board of Education, and a film librarian has charge of the 800 films which the state now owns.

#### OPPORTUNITIES FOR CONSTRUCTIVE WORK

The meetings always bring out a large attendance and accomplish far bigger things than they seem to be aiming at, inasmuch as farm demonstration agents, County Superintendents and health officers, the Superintendent of Public Welfare, and all other constructive state and county forces are encouraged to use these "get-together" occasions to the fullest extent. It used to be difficult to get people out to farmers' meetings held by the State Department of Agriculture and to other affairs of the sort, but the "movies" have proved an unfailing drawing-card.

#### COUNTY PROGRESS FILMS

In each of the twenty counties in which this community service is now given (this being the limit under the present appropriation), what is known as a "county progress film" is being made; that is, a pictorial survey of the county, showing the best and poorest schools, homes, farms, roads, live-stock and so on, as well as characteristic local activities. After a county progress film has been exhibited in the communities of that particular county, it is sent round the circle so that other counties may see what is being done elsewhere. It is then filed in the state's permanent film library for future reference.

POPULARITY OF THE NORTH CAROLINA  
PLAN

It is impossible to describe adequately the interest that is taken in these "rural movies," as they have come to be called. They draw like a circus. Young and old come in swarms, arriving in every sort of vehicle, and the interest and enthusiasm are a joy to witness. The school-houses are packed to the final square inch, cushions being brought in from automobiles and farm wagons to increase the seating capacity. The assembly room is brightly lighted; there are good stories and music, and there is frequently a special exhibit of community activities. All sorts of live discussions crop out in that wholly spontaneous way which testifies to the genuineness of the interest that is being taken in the meeting. It is delightful also to notice the people's attitude of proprietorship toward the pictures.

There are now twenty county units going full time and holding 400 community meetings each month, with a total monthly attendance of 45,000. No stronger testimony to the popularity of this new and remarkably alluring educational service could possibly be given, for it must be remembered that the first circuit—that in Sampson county, which is entirely rural—was not established until December, 1917. Forty more counties are asking for the service; in fact, all the counties want it. All that is required to make it possible to meet their demand is an increase in the state appropriation.

The cost per year per county is \$3,200, itemized as follows: salary of County Director, \$1,500; salary of mechanic, \$1,200; expense of operation, \$500.

## FAR-REACHING BENEFITS

Thousands of people who never saw the movies have been reached by this plan. In a certain mountain county, not over forty in a first audience of 280 had ever before seen a moving picture. In the mountains, in remote sections, people will often walk eight or ten miles to attend these meetings, spending the night with friends and returning home in the morning. The "picture show" is an event. It is something to look forward to, and the community where it is given naturally feels a pride in being chosen. People become used to these centers, and presently there comes that development so much desired in isolated communities—the consolidation of several small schools into one large central school.

North Carolina has scored what may be termed a "visual success," and it is small wonder that the plan that has been developed there is creating comment throughout the Union. It is sure to spread, for there is no finer way of getting a grip on rural folks and increasing their content with country life. By concerted effort the best type of educational and recreational motion pictures can be brought to brighten the lives and widen the horizons of young and old, even in the most remote sections of our country.

# TEACHING ENGLISH TO FOREIGNERS THROUGH MOTION PICTURES

BY C. L. HULTGREN  
Jefferson City, Mo.

**I**N acquiring a foreign language one feels conscious of a new world gradually unfolding its vistas of beauty and revealing its mysteries.

This is especially true when the language is learned in response to the demands of strenuous necessity, or under the pressure of meeting everyday needs, as is the case with the immigrant. To him the need is urgent and real; yet not until the war brought home to us in striking ways the necessity for thoroughly Americanizing the foreigner on our shores, did we give any really serious consideration to the question of teaching him our language.

## THE PROBLEM TO BE SOLVED

Too long have we followed the theory that it was well for the immigrant to learn our language if he so wished; if not—well, no matter. Yet is it not true that if he does not learn the language he is despised as ignorant or pitied as lacking in intelligence?

The immigrant himself feels the situation keenly—how keenly, no one who has not passed through this experience can ever understand. It is not a feeling conducive to the rapid or voluntary Americanization of the foreigner. Nevertheless, the speedy assimilation of the immigrant is a vital necessity at the present stage of development of our institutions, for there can be no true fusion of nationalities without the common medium of intercourse provided by a common language.

The question which must be answered is: "How can we provide the means whereby the English language may most readily be acquired, and with it some knowledge of American institutions and ideals?" This is the fundamental problem of Americanization.

## THE SOLUTION

A solution of the problem is offered by motion pictures. Pictures are universal in their appeal. They speak a language that can be grasped by the newcomer, and the impression they make is often more vivid than that made by either spoken or written language. These things point to motion pictures as the ideal method of teaching English to foreigners.

The subject-matter of the lessons here outlined has been selected with due regard to these psychological facts: (1) that the things we know most about interest us most, and (2) that the capacity to learn—other things being equal—varies as the interest. Therefore, the lessons have been made to deal with commonplace matters with which every immigrant is familiar, and with things of universal interest. The following lessons will be sufficient to indicate the general plan of such a course.

## THE MEANS

The text is thrown on the screen by means of the stereopticon. At the same time, alongside the text, the moving pictures are shown, being repeated or

held according to the need and comprehension of the class. The effect will be that of presenting the native and the foreign language to the immigrant in parallel columns. Not only objects, but actions and time of action, can thus be shown.

Following the lesson, printed or mimeographed sheets of the text should be given out so that the student will

have them in permanent form. This saves time, but with exceptionally capable classes it is preferable to have students write the lesson in a blank book and illustrate with marginal drawings.

In conducting the lessons, blackboard work, questions and answers, singing and dramatization should be freely used. Much depends on the skill and enthusiasm of the teacher.

### Lesson I

#### ON THE ATLANTIC OCEAN

This is the steamship "Northland." It is sailing to America. John and Louise are on the ship. Early in the morning they can see the sun rise. It is fifteen minutes after five o'clock. They watch the sun and walk on the deck until seven o'clock, when they eat breakfast. After breakfast they go out on deck and talk with the other passengers. Sometimes they play games till noon, which is twelve o'clock. Then they have dinner.

In the afternoon it is hot on deck and they sit in the shade. In the evening it is cooler, and they walk around the deck before supper. Supper is served at six o'clock.

After supper John and Louise go up on deck again. It is evening now, and the sun is going down. This is called the sunset. After the sun has set, twilight comes. It grows darker and darker. Now the night has come.

John and Louise look up and see the stars in the sky. Soon the moon rises and shines upon the water. It is ten o'clock. The passengers go below deck. Soon they will be asleep.

Show the picture of the "Northland" sailing westward, and then introduce John and Louise, separately, showing them later among the passengers.

Show the pictures as suggested in the text: sunrise, time indicated by the clock, and John and Louise, among others, watching the rising sun. Picture the breakfast, with the time indicated by a clock. (Later the same for dinner and supper.)

Show the deck with games—quoits, blind man's buff, ring games. Picture the heat by showing people wiping away perspiration and going to the inviting shade under awning.

Indicate evening by lower sun and finally the sinking sun and sunset with twilight; then the gathering darkness, with stars and moonlight.

Show passing of time by clock, and finally a scene of sleeping passengers in bunks.



## Lesson II

## A STORM ON THE OCEAN

One day a storm came up. Clouds rose in the sky. The wind blew and the clouds flew across the sky. Soon the sky was black with clouds.

Then the lightning flashed. John said:

"It will rain."

"I am so afraid of lightning!" said Louise.

The rain began to fall. The passengers went inside. The rain beat on the deck. The wind blew hard, and the waves dashed high against the side of the ship.

After a time the rain stopped falling. The clouds began to scatter and the sun shone again. The wind stopped blowing, but the waves still rolled and the ship tossed on the waves. The passengers came up on deck again. Louise came on deck just as the sun was setting. It was evening.

"If the ship were still I should feel better," said Louise.

John answered: "The storm is over now, and the waves will be still by morning. It will be calm."

In the morning it was as John had said. The sea was calm.

"We had a hard storm yesterday," he said.

"I am glad we do not have a storm today," said Louise.

Picture the wind's fury by showing hats, dresses and coats flapping in the wind and the passengers looking skyward as the clouds come up. Then show the blackness and the piercing brightness of lightning flashes. John by gesture indicates "It will rain," and Louise shows what she says by her attitude of fear.

Show the gradual coming of the rain, the passengers seeking shelter, and the increasing force of wind and waves.

Picture the gradual cessation of the rainfall and the breaking up of the clouds. Then the sun breaking through and indications that the wind is blowing less hard. Then show the passengers venturing forth on deck, and finally Louise at sunset.

Show a calendar with date—say, June 16—indicated.

One picture of storm with word "storm" beneath. One of a tranquil sea with word "calm."

Picture of calendar dated June 16, and words: "It stormed today." Of June 17, with words: "It is calm today, but yesterday we had a storm."

## Lesson III

## JOHN AND LOUISE SEE THE NEW LAND

Land was in sight. All of the passengers crowded to the rail to look. The ship sailed along the shore of Long Island, headed for New York.

The immigrants were glad. John waved his hat:

"This is *my* country now!" he said.

As they entered New York Harbor the sailors hoisted the American flag. Louise clapped her hands as she saw the Stars and Stripes go up.

"How pretty it is!" she said. "That will be my flag now."

While she spoke the band began to play. When the passengers heard the sound of the music those who were sitting stood up. The men took off their hats. Those who knew English began to sing. The ship sailed up the harbor and past the statue of the Goddess of Liberty. Then all tried to sing. This is what they sang: (Here are to be added words and music of "The Star-Spangled Banner.")

Register the first sight of land, with the passengers crowding the rail. Indicate the course of the ship by a map of New York Harbor and surroundings, as Long Island, Staten Island, the Jersey shore and the North River.

Indicate the feeling by showing an expression of happiness on the faces of the passengers.

Show the hoisting of the flag, and then show the starry field with the word "stars" beneath, and the stripes with the word "stripes."

Show the band playing, the people rising, and the removal of hats. Here also show the picture of a man with "man" beneath; of several with word "men" beneath. In the same way show "woman" and "women."

Show the picture of the Goddess of Liberty, and the people singing, with the words and music forming part of the text.

# VISUAL MATERIAL: SPUR OR SEDATIVE

BY L. C. EVERARD  
United States Forest Service

LAST week a salesman who was in my office to sell film assured me that his visual material was "fool-proof"—that no matter how inefficient the teacher might be, the lesson would be taught exactly as it should be taught. "It's all on the film."

There is a fallacious notion abroad in the land that if teachers are not quite up to the mark, their work can be improved by supplying them with pictures, either still or moving. The truth is, however, that these things improve the work of those teachers who are already efficient, who can dominate and use the machinery that is given them. The imperfectly trained teacher, the teacher lacking in force or personality, the teacher who teaches for a living rather than for the joy of contact with perpetual youth, becomes a machine-driven puppet instead of a master.

## THE PERSONAL FACTOR

The sleepest lecture course in all my college years was the only one in which "visual material" was used. In those days my endurance was extraordinarily good and by sheer determination I managed to keep my spine erect and my eyes open; but the man to my right had recourse to whittling the bench and the one to my left slept peacefully with his head on my shoulder. That course of lectures is the nightmare of my under-graduate days, for I disliked the sleeping classmate

and he slept consistently. Each of those lectures seemed to last a year, and I emerged from each with a vow that never again would I enroll for such a course.

On the other hand, there was another course in which the only properties used by the lecturer were a pine table and swivel chair in which he reclined with a dextrous air. He just talked, while we leaned forward in our seats and listened spellbound. After what seemed like ten minutes he would give a start, look at his watch, and remark: "That's all. The hour's over." Sometimes, still under the spell, we stayed so long in our places that he would ask in a tone of surprise: "Well, why don't you go? The hour's over."

Was it the visual material that made the first of these courses so dull and sleepy, or the absence of visual aids that made the other course so stimulating? Obviously not. But these examples bring out with sufficient clearness, I trust, one of the great dangers always threatening modern education — the tendency to substitute machinery of one kind or another for real men or women in the classroom. Visual material cannot be substituted for training, ability and initiative in the teacher. If we are to use it successfully, we must rather have better teachers, better trained and better paid.

In the hands of the right kind of teacher, lantern slide, film and photograph exhibit are like a sharp razor

in the hands of a competent barber. The work is done with thoroughness, neatness and dispatch. The pupil's mental stubble is all cleared away; the most remote corners are swept clean of misconception and inapprehension.

#### WHERE VISUAL AIDS ARE INDISPENSABLE

Slides and movies are especially valuable in what may be called "out-door" subjects, such as geography, forestry, agriculture. One of the first and most important lessons in forestry is the necessity of fire protection. Fire is the forester's worst enemy, an enemy so fierce and ubiquitous as constantly to threaten the absolute ruin of the work of generations of foresters. Aside from getting him on the fire line, filling his lungs with the stinging smoke, and wearing the flesh off his bones in week-long, night-and-day battles with the enemy, what better way is there of

bringing home this fact to the forest school student than the motion picture? Not only is the basic principle that fire protection comes first vividly impressed upon the student's mind, but there are brought before his eyes modern methods of preventing and fighting fire, with all the details of mobilization of crews, supply service, the strategy of fire line location, and hundreds of other things vital to a forester's education.

To be sure, the film has to be followed by careful, detailed study of the various branches of the work; but just as in the study of warfare, pictures can be used to show actual conditions on the battlefield, so they can be used in forestry teaching to show actual conditions in fighting bona-fide fires. To the student who has seen such a picture, showing perhaps a trainload of men being rushed to the fire lines, fed and sheltered, and brought up in relays to the fight, the study of methods of supply



#### GOOD LUMBERING

This photograph and the one opposite are striking examples of the advantage of the picture in teaching methods of handling timber. On the one hand, low stumps—brush piled for burning in the wet season—good seed trees left for another crop

and transportation of fire-fighting crews takes on an interest that could be aroused in no other way.

In the same way, other operations in the out-of-doors lend themselves with peculiar effectiveness to the motion picture method of presentation. Logging, tree planting, turpentine and other woods operations can all be shown as they are actually carried on. The only other way to do this is to take the student into the forest—an expensive and difficult undertaking.

#### COMMERCIAL GEOGRAPHY AND AGRICULTURE

In commercial geography, pictures showing the handling of wheat at Minneapolis, cattle at Chicago, cotton at New Orleans, and other products of other regions, will help immeasurably to remove the curse of abstraction from the study. In agriculture, too, the possibilities are boundless, for there the

teacher, when the proper studies have been made, will be able to contrast not only good and bad methods, but the concrete results of each. The Department of Agriculture has already made an excellent start in filming such work and is going ahead as fast as possible with its very limited appropriation. It has brought out a considerable number of films on a variety of subjects, ranging from eggs to forest fires. These are supplemented by lantern slide sets and photographic exhibits, all aimed at filling the need for what might be called "the actual" in the teaching of agriculture, forestry and related subjects.

#### PUBLIC EDUCATION IN CONSERVATION

The visual material of the Forest Service is prepared not only for school work, but for other fields of public education as well. The means and the advantages of forest conservation on the



#### BAD LUMBERING

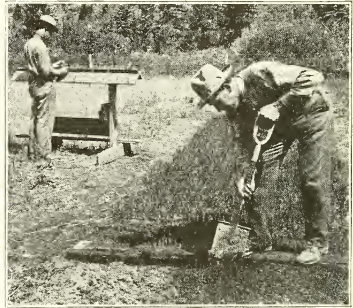
Here we have an illustration of wrong methods of handling timber: the best part of the tree wasted in high stumps—slash left on the ground to become a fire trap—no proper provision for a new stand



one hand, and progress in wood-using industries through scientific study and experiment on the other, are the two main subjects with which its films have thus far dealt. The practical application of educational work in such matters cannot wait for the next generation to grow up, for the evil results of ignorance and carelessness are already making life more difficult for the American people. It is necessary to reach, as quickly as possible, every individual and every industry that uses or deals in the products of the forest, teaching both how to use the present supply of timber to the best advantage and how to provide for a future supply. The existence of this magazine and of all the hundreds of other publications printed in America depends upon timber; our textbooks, from the primer of the first grade to the calculus of the en-

gineer, come literally out of the woods. And so it is with thousands of other essential things: wood either goes into their construction or into the molds, forms, etc., used for their manufacture.

If the need for wood confronts us at every turn, why do people have to be



A FOREST SERVICE NURSERY  
Showing methods of transplanting seedlings

educated up to an appreciation of its importance and of the importance of conserving the forests? The answer is that we have hitherto had so much wood in this country that we have accepted it as we do the air we breathe and the water we drink. It was for a long time a matter of course. And now, though the supply has dwindled to a dangerous extent, it is difficult to get people to change old habits of thinking. They will have to do so, however, unless they wish wood to become in the end an imported luxury, with a consequent lowering of our standard of living.

To bring home the facts in the case not only to the schools, but also to the industry of the country, visual material offers one of the most effective instruments available. For instance, by means of such material, it is possible to suggest ways in which the lumberman,



SMOKE FROM A FOREST FIRE

the manufacturer of vehicles or furniture, the shoemaker, the threadmaker, and hundreds of others, can prevent a large proportion of the enormous waste that is going on all the time, for we now waste about half of all the material in every tree we cut.

This economic aspect, however, is not the only important one; the habit of mind that goes with it is all-important. Education is not merely a matter of imparting information. Mental alertness and endurance are far more important. I use "endurance" in the sense in which it is used by the athlete—the opposite of what Bacon calls "brittle wit."

#### OUT OF THE RUT

Visual material is admirably adapted to the suggestion of new ideas and new ways of approaching a problem and to helping the mind out of mental ruts. A motion picture showing a view from

an airplane has to many people the effect of a great mental stimulus. Things look so different that the mind is aroused to speculation on the reality and the justness of its previous conceptions. Earth, forests, seas, cities, roads and other familiar things are found no longer to fit into the old pigeon-holes. Subconsciously we realize that the world is not cut-and-dried; that there is always another point of view from which to look at it and at life itself.

#### THE INSPIRING FUTURE

Today we are seeing only the beginning of the educational effectiveness of the motion picture. If the most is made of this beginning, if it is followed up by such treatment of the subject in hand as will induce cerebration instead of merely entertaining those in attendance, there is every reason to believe that the movies will become a means of education in the very highest sense.



FIRE'S DEVASTATING TRAIL

There is nothing like a photograph to bring home to us the effect of a forest fire

## PAGEANTRY NOTES

A BRILLIANT and most unusual pageant in honor of Joan of Arc was presented on the campus of Fordham University in New York City on May 16th. The production was notable not only for the number of persons employed—ten thousand—but also for the attention paid to its elaborate and varied details. As an example, the music consisted of folk songs of the fifteenth century sung by a chorus of five thousand and accompanied by a symphony orchestra.

The pageant was presented in nine episodes which comprehended the entire career of the simple peasant maid. The time that she tended her father's sheep in her beloved village of Domrémy was followed by scenes of the visions that aroused her in behalf of scourged France. Then follow her reception by the Dauphin and the magnificent rout of the English, leading up to the climax where she enters Rheims, triumphant, at the head of her adoring army and beholds the Dauphin crowned Charles the Seventh of France. Her capture at Compiègne and her gallant fight for life in the dark medieval courts of Rouen form the seventh and eighth episodes. Her final agony at the stake was delicately and effectively done. The final episode represented her canonization and the entire personnel of the pageant was grouped together in a most imposing tableau.

Such a portrayal of such a universally inspiring life could not fail to teach a great lesson of patriotism and devotion.

★ ★ ★

IN connection with the convention of the American Society of the American Indian, to be held in St. Louis, Mo., November 16-20, there will be a pageant of unusual interest presented. The plan is to elaborate some episode of St. Louis history in which the Indians were prominent and to use that as the basis of the pageant. Various St. Louis societies such as the Archaeological, the

Historical and the Pageant, will co-operate with the American Society in planning and staging the production. It is expected that many of the actors will be found among the five hundred delegates representing the remaining original Indian tribes.

★ ★ ★

A MERICANIZATION was the fundamental thought underlying four large pageants that were given in the city of Chicago, beginning Monday, August 23. These pageants, extending over eight days, were presented by the Immigration Commission of the Chicago Y. M. C. A. in concluding a series of open-air meetings held in various parks throughout the summer.

The pageants were historical in character, dealing with events from the reign of Charles I down to the present time, but the emphasis was continually placed on the things that make for good citizenship. Among the episodes particularly elaborated was that celebrating the tercentenary anniversary of the Landing of the Pilgrims, an occasion which is receiving due attention everywhere. The characters were played by representatives from the different nationalities with which the commission is working.

★ ★ ★

A PAGEANT entitled "The Light," which was presented last February at the Cleveland convention of the National Education Association, proved so effective that it has since been presented in a score of American cities. The pageant is considered a marked contribution to educational literature and its success has gained new distinction for the author, Miss Catherine T. Bryce, who is now assistant Professor of Elementary Education in the recently established School of Education in Yale.

The play, which is allegorical in form, shows vividly the importance of giving proper support to educational projects.

It also shows the disastrous conditions that result from indifference. The chief character is a personification of any city. Seated at ease in his study, he decides to cut down on the coming year's appropriations for the schools so that the budgets for the other departments of the city may not be reduced. Feeling that matters are satisfactorily adjusted, he sinks into complacent slumber, which is interrupted by the appearance of Education, who shows him how educational methods have developed through the centuries.

Among the great educational agencies illustrated in a succession of scenes is that of Experience—oldest of all teachers—which is presented in an Indian scene, where the savages learn sadly that certain beautiful fruit is to be used visually, not internally.

Indian women laboriously grinding corn between heavy stones and refusing to adopt any innovation just because their grandmothers and great grandmothers had used the same process, forcibly depict the influence of tradition.

Invention—that vigorous promoter of civilization—is painted in a scene from Hiawatha showing the beginnings of picture-writing. The valuable results of training as shown in contests and dancing by bands of Greek boys and girls, and the benefits of discipline portrayed most appropriately by a small phalanx of Roman soldiers, are two of the interesting and effective scenes.

The picturesque days of King John of England are used as the background for the first lesson in democracy. A feudal lord arrogantly notifying an unreasonable serf that the perusal of the great illuminated books of the castle and the twanging of the strings of the troubadour's harp are not privileges of hench-

men is checked by the news of the signing of Magna Charta. "Justice for all has come!" it is announced. While we know that this statement and the arrival of justice were not simultaneous, yet the scene is excellent in its motive.

At the end a model school, made possible by liberal tax schedules and co-operation on the part of the public, is contrasted with a crowded, poorly equipped, poorly taught school and the lesson is obvious. When the finale is concluded, Any City awakens and, benefiting from what he has seen, makes an appropriation suitable in every respect for the needs of the schools.

A more detailed account of this pageant, written by Charles H. Lake, Assistant Superintendent of Schools, Cleveland, Ohio, may be found in the July number of *The American City*.

★ ★ ★

THE celebrations long planned in England to commemorate the three hundredth anniversary of the sailing of the Mayflower, are beginning.

On July 24th, a pageant emphasizing the historical significance of the event and showing vividly the color and romance of the great adventure of the departure of the Pilgrims was presented near the place from which the devoted band sailed. A carnival and sports typical of the days of "Merrie England" followed the pageant.

On the same day, Romford, Chelmsford, Southend and Billericay, towns in Essex from which many Pilgrims came, observed the occasion fittingly.

On July 29th, Ambassador Davis unveiled a memorial in the Congregational Church at Billericay in honor of the four Pilgrims who came from that town.

These celebrations are but the first among many yet to come.



## MISCELLANY

FROM over the seas comes an interesting comment on the use of motion pictures as an educational medium. In the *Bioscope* for July first is published a short article by C. J. Power, M. A., discussing the possibilities of the cinema in connection with school room use. In beginning, he admits the fact that the eye is the royal highway to learning. He believes, however, that the lantern in conjunction with the spoken word is as efficacious as the moving picture. In the study of some subjects, the use of the cinema may be even harmful, in others it is merely incidental, but in such a study as history it should become a most vital factor.

Thus, for instance, he says that scenics and pictures of travel confuse because of their very variety and continual motion. It is much easier to obtain results for the study of geography with the slide, which emphasizes and concentrates upon some salient feature.

Pictures may be of aid in connection with modern languages and certain sciences, but not any more so than other visual methods.

It is in the study of history that the cinema is most helpful. The great difficulty in connection with teaching history has always been the impossibility of making it live and vital to the student; in other words, of arousing his imagination. To quote: "The history of the past is mere boring records if one is not oneself transported into it. In kindling this often slow fire of imagination, the cinema has a great mission." Because seeing is almost synonymous with remembering, motion pictures can keep the past and its significance continually within the student's horizon. Moreover, Mr. Power feels that a sympathetic understanding of the past may tend in some degree to alleviate the great social unrest of today. The motion picture here is superior to the spoken drama because there is no limit to the possibilities in setting, and because the performances can be repeated indefinitely.

The slow-moving films will prove of great value in physical training work, but they must be shown so as to permit the spectators to check and practice the movements simultaneously.

Moving pictures do more harm than good in connection with the study of the classics, for the pervading soul of the author is lost and the original is gone. Such performances, no matter how seriously done, cannot help being more or less farcical.

★ ★ ★

AN interesting experiment in visual instruction recently conducted in the schools of New York City is mentioned in the *Moving Picture World* of August 7th. Under the direction of Eugene E. Nifenecker, Director of the Bureau of Reference, Research and Statistics, and at the request of Mr. Ernest Crandall, Director of Public Lectures and Visual Instruction, tests were carried on in seven schools.

The first half of the sixth grade was selected for the experiment, which consisted of teaching the geography of South America by moving pictures as well as by the text. Corresponding to each one of these seven schools using visual means, there was a school called a control school, which employed the regular method of teaching geography from the text only. At the end of the course, fair and impartial questions were made to estimate the results. The average in the first test showed 33.9 credits for the classes taught visually as against 23.3 credits for the control groups. Other tests showed a like proportion greatly in favor of the classes that employed visual methods.

★ ★ ★

FRANKLIN K. LANE, former Secretary of the Interior, writing in the *National Geographic* for June, says: "We are all fascinated by pictures. Recently I have induced the motion-picture industry of the United States to enlist itself in this cause and produce Americanization pictures, and give upon its



screens slogans, suggestions and apothegms that will stimulate the American ideal, because I have the notion that there is something in the United States that we call Americanism that is distinctive, that no other country has, and that it is expressed in the lives of our people, in their work, in their philosophy, in their tradition and history."

★ ★ ★

**R**APIDLY and certainly moving pictures are exercising a mighty, enveloping influence over art. Critics in all stages of devotion watch the process of devouring with pitiful and impotent shrieks. There is one, however, who assures us that the detestable cinema is making the American nation a musical people and placing American music on a plane where it can be called art.

Sigmund Spaeth, writing in *Arts and Decorations* for May, says: "It is through the motion picture theater that young America is today acquiring its most solid and practical education in music." He points out that musical improvement has run parallel with the improvement of pictures and that the fact that music has always been used interpretatively with the motion picture is of unspeakable significance. It is true the beginnings were crude enough in the old days when the mechanical piano was started at the first of the program and not allowed to run down until the end; or when an indifferent pianist, having exhausted her repertoire by the middle of the third reel, obligingly began again. Then came the time when songs were adapted to the subtitles, the accuracy of adaptation depending upon the musician's dramatic instinct and memory. The conductors in the great theaters of today have gone far beyond taking their cues from the wording of the leaders, however. The musical accompaniment of today's motion picture expresses all delicate differences of mood and atmosphere. It is truly art.

Men whose names mean something in the musical world are engaged not only in selecting, arranging and fitting music to films, but also in composing entire film symphonies. One notable name that

can be mentioned in this connection is Victor Herbert. Among directors, Griffith was one of the first to see clearly that the right kind of music heightens the emotional effect of the picture. Those who saw *Intolerance* will never forget the haunting melody that helped to make the Babylonian episode almost unbearable in its intensity. Nor will they forget the heart-appealing sweetness of the strains of "Oh Believe Me if All Those Endearing Young Charms" as they occurred from time to time throughout the production.

It is believed that the motion picture may offer a more varied field to the composer than opera, for he is not hampered by the necessity of writing within the range of the human voice and of subduing his orchestra so that the words get over the footlights. Moreover, in the motion picture, words, action and setting, all come concretely to the aid of the composer, affording him a creative field which is infinite in its possibilities.

The great point to note, however, is that the American public has been unconsciously swept along with this musical progress, and that the average American citizen is five times as familiar with classical music as he was ten years ago. This familiarity has been thrust upon him through the screen explanation of the interlude of the orchestra and through the musical interpretation of the pictures. In the last case, he may not realize that the music is classical, but he does know that he likes it. Where he once listened with avidity to "Where the Wurzberger Flows," he now listens with unfeigned enjoyment to strains of Beethoven and Mendelssohn.

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**"P**UTTING pictures into the motion picture" may seem a strangely paradoxical statement, but that is what Roy Wagner, in an article contributed to the *New York Globe* and reviewed in the *July Current Opinion*, declares must be done to raise the cinema into the realm of art. Producers now believe that they have done their all when the sets are gorgeous, expensive

and appropriate to the most minute detail. This lavish attention to detail is not true artistry, however, says Mr. Wagner, for the concentration that should be centered on the characters and on the development of the underlying theme is diffused by the wealth of details with injurious effects upon the appreciation of the drama as a whole. For example, a landscape painter in painting a tree does not paint the leaves, for he knows that if one's interest is localized on the leaves, one does not see the tree. Art is as much a matter of elimination as of selection. Mr. Wagner goes so far as to state that at one-quarter the cost of Mr. Griffith's sets for ancient Babylon, a well-equipped artist could have attained twice the magnificence. To quote further from his article:

"We see the world with two eyes, hence stereoscopically; but the camera has but one eye, and so, like the painting of the artist, the picture can be shown in but two dimensions. The third dimension must be suggested by the artist. The camera cannot do it.

"To achieve this, the artist introduces and forces what is called atmospheric perspective. He envelops his figures in light and shade so that they recede and take their proper places. So far on the screen, these few stereoscopic effects have been achieved, one suspects, quite by accident. The artist knows intellectually how to do this, for he paints with light and shade."

★ ★ ★

THE General Federation of Women's Clubs celebrated its thirtieth birthday at its Biennial Convention held in Des Moines, Iowa, June 16-23, called the Golden Prairie Biennial. While the social events planned by the Local Biennial Board gave relaxation and a chance to feel the warm welcome of Iowa, the business of the convention was conducted by Mrs. Josiah Evans Cowles in such an efficient way as to command the respect and admiration of the disinterested bystander.

The delegation of 1500 women considered the work that had been directed by the eleven departments of work during

the biennial period of 1918-20, embracing child welfare, community service, conservation, overseas units, Americanization, all of which had been so shaped as to use every woman belonging to the General Federation of Women's Clubs to her fullest capacity for service to aid her government during a time of war.

The plan for the coming biennial period is to marshal the forces of these same Women's Clubs to do their best work in hastening the return of normality in all branches of work and living, now that the Great War is over.

Mrs. Thomas G. Winter, of Minneapolis, the newly-elected President, has been the Chairman of Americanization, besides being Second Vice-President, serving with Mrs. Cowles.

Resolutions were adopted on the following subjects: Americanization covering compulsory education and including adequate training in American ideals, history and government in every state for all children between the ages of six and sixteen; English as the sole medium of instruction; revision of naturalization laws, and standardized qualifications for direct citizenship for women and minor children; national library service; waterways, eighteenth amendment enforcement, Pilgrim tercentenary celebration, conservation, visual education, occupational therapy, thrift, civil service reform, retirement law, and many other constructive plans. This list serves to show the scope of the matters considered by this thoughtful body of public-spirited American women.

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AT Madison, Wisconsin, on July 14, 15, and 16, was held a convention which bids fair to have a real significance for American education. During those three days the National Academy of Visual Instruction took on definite form, declaring its general purpose to be the promotion and development of visual education.

Educational leaders and prominent men interested in visual education came from north, south, east and west to take active part in the discussions and deliberations which led up to the formation of the permanent body.

Such speakers as W. H. Dudley, of the Extension Division of the University of Wisconsin; J. H. Wilson, Director of Visual Instruction, Detroit Public Schools; J. H. Shepherd, of the University of Oklahoma; W. C. Crosby, Director of Community Service, Raleigh, N. C.; Dudley Grant Hays, Director of Community Service, Chicago, Ill., and others of like repute, all showed themselves to be thoroughly imbued with the ideals of visual education and alert to its immense possibilities.

The initial duty of the Academy was felt to be the delimitation of the field and the establishing of the principles of visual education. Elaborate researches would then be carried on to determine values and methods in the new field. The Academy would then become a clearing house for ideas, experiences and information concerning projection equipment, film material, its sources, availability, methods of using this material, etc.

The meetings will be memorable because of the fact that a gathering of professional men, vitally concerned with education, was welded into a permanent organization for the consideration and promotion of visual instruction.

The following men were named as officers: President, WILLIAM H. DUDLEY, University of Wisconsin; vice-president, DR. G. E. CONDR, Director of State Surveys, Lincoln, Neb.; secretary, J. H. WILSON, Department of Visual Instruction, Detroit Public Schools, Detroit, Mich.; treasurer, CHARLES ROACH, Visual Instruction Service, State College, Ames, Iowa; executive committee, G. E. CONDR, J. W. SCROGGS, Director of Extension, University of Oklahoma; S. G. REINERTSEN, Superintendent of Schools, Alta, Iowa; A. W. ABRAMS, Director of Visual Instruction, State Department of Education, Albany, New York; W. M. GREGORY, Curator Educational Museum, Cleveland, Ohio; W. C. CROSBY, Director Community Service, Raleigh, N. C., and the president ex-officio of the Academy.

For a more detailed account of the meeting reference may be made to *The Educational Film Magazine* for August.

SEPTEMBER first witnessed the initial issue of the "Ford Educational Library." According to a statement from the non-theatrical department of Fitzpatrick and McElroy, Chicago, sole representatives of the "Ford Educational Library," there is being produced an educational film library that will provide for schools and colleges films of great educational value. (These films are not to be confused with the "Ford Educational Weekly," which is entirely a separate production, intended for use in the theaters.) These films are being prepared by educators who are acknowledged experts in their own subjects, to meet all conditions and requirements of the school curricula. Moreover, the library will offer to every university and college in the United States facilities for production of films in any quantities on any desired subject.

DR. S. S. MARQUIS, former dean of St. Paul's Cathedral, Detroit, will have general charge of the "Ford Educational Library." DR. W. H. DUDLEY, chief of the Bureau of Visual Instruction, University of Wisconsin; PROFESSORS CHARLES ROACH, Visual Instruction Service, Iowa State College of Agriculture and Mechanical Arts; J. V. ANKENY, Visual Presentation Department, University of Minnesota, and W. M. GREGORY, Director of Visual Instruction, Normal Training School, Cleveland, Ohio, are associated and actively engaged in the editing and final review and approval of the films.

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ON June 29th there was incorporated under the laws of the State of Indiana a society called "The National Visual Education Association."

According to a prospectus sent out by the Association, its objects, briefly summarized, are:

To co-operate with other educational, civic, patriotic and commercial associations.

To aid in advancing education by supplementing common school branches; and

(Continued on Page 70)

# BOOK REVIEWS

## "PICTURED KNOWLEDGE"

(6 Volumes)

*Published by the Compton-Johnson Co.,  
Chicago, Ill.*

The very title of these books is most happy and suggestive. They are prepared expressly for use in that richest of all educational fields, the child, by a staff of eminent scholars under the chief-editorship of Calvin N. Kendall, Commissioner of Education of the State of New Jersey. The work is designed as a home supplement to the school and should prove a blessing to parents who realize that their own educational duty is not ended when the child enters the first grade.

The mere name, "Pictured Knowledge," is significant. The entire contents have been ably selected from what is good to "know" and everything is presented in the "picture" way. Expert choice of material, logical arrangement, skilful presentation in interesting and informal language, splendid use of illustration—these are evidence that the distinguished board of editors and contributors did far more than "lend their names" to the work.

These volumes are the product of sound scholarship combined with a sympathetic understanding of the child mind and a full realization of the potency of pictures. Educators seldom attain such freedom of phraseology as characterizes these books. Such expressions as "Pranks the River Plays," "Why the Sun Is Your Grandfather," "Going Down Where the Grass Begins," "An Ant Convention in Africa," lead the child, in a most willing mood, to a knowledge of geography, astronomy, botany, zoology, etc. "The World's Sugar Bowl," "Fish That Ride in a Pullman," "Will We Miss the Oil When the Well Runs Dry?" "Weaving Dreams Into the Rugs," "Putting Gold on to Boil," "A Bushel of Wheat in Ten Minutes"—such phrases are irresistible invitations to the child to learn more about the Industries.

"Little Eyefuls of Knowledge" are brief and fascinating answers to questions which the child may never have thought of asking, but which he will learn to ask more and more as he reads on in these pages. Art, Architecture and Literature; History, Government and Civics; Health, Science, Inventions, Philanthropy—the whole range of things that are the normal food for growing minds can be found here in substantial quantities, and always in a form most acceptable to the young mental appetite.

The variety of illustration is noteworthy. Pictures in black and white, pictures in color, have been beautifully reproduced from photographs, drawings and famous paintings. Excellent use is made of designs, pictured diagrams, pictorial maps, and especially of relief maps effectively photographed. The richest sources in the country have been tapped for photographic material, and the designs and drawings are evidently the work of artists with an instinctive grasp of the purpose before them.

The "Plan Book" is a feature which enables the parent to guide the reading of the child, co-ordinate it with his school activities and thus insure orderly progress in his mental development. Finally, a single, masterful index to all the volumes renders this whole wealth of material instantly accessible, for either the guiding parent or the exploring child.

Faults in the work can be found, of course. We have noticed a few even in our necessarily brief examination. These flaws, however, are largely matters of opinion and, in proportion to the big values all around them, they seem rather too small in the ensemble to justify the time and space for discussion.

We have seldom seen equal educational value in equal compass. It will be a rare child who will not thrill to these books. (We have had some little difficulty in putting them aside ourselves.) He should be interested from the first

glimpse; he cannot read on without learning; and the authorities who have produced the work have made sure that what he learns will be invariably worth-while. VISUAL EDUCATION is glad to express its approval of "Pictured Knowledge."

★ ★ ★

## NEW GEOGRAPHY—Book II

Wallace W. Atwood

*Published by Ginn & Co.*

To the question, "What, in his study of geography, interests the average child most?" the experienced teacher replies unhesitatingly:

"People—their modes of life, their surroundings, their occupations."

Dr. Atwood's treatment of his subject is based on human geography: the life of the peoples of the earth as controlled by their environments. More and more have we come to realize that bounding countries, naming capes and bays, and locating cities no longer suffice. Geography can never again be thought of as material for memory tests on isolated facts; its great concern must be to acquaint the child with the life of other peoples of the earth and the geographical conditions under which they live; it must furnish him with a background and basis for judging his opportunities for making the best use of the natural resources of his own environment.

Scarcely do we need to say—so often has the fact been brought home to us during the last few years of concern over world problems—that our national outlook has been wrenched from its narrow limits to a world view. Our days of "splendid isolation" are past—the American child of today and tomorrow is a world citizen. He can understand the problems of other peoples only in direct proportion to his knowledge of the conditions under which they live. The study of human geography is the biggest factor in ultimate world peace.

The first book of the series (New Geography, Book 1—Alexis Everett Frye—Ginn & Company) treats home geography

and a simple view of world facts very charmingly for the child. Dr. Atwood carries out the idea for the child in the upper grades by establishing certain units of study—natural regions—which differ from each other in soil, climate, surface features, and hence in resources; and so have produced groups of people different in occupations and modes of life. The Malay in the jungle-like forests of southeastern Asia is forced by his environment to an existence quite different from that of the herdsman on the open pampas of Argentina. The regional treatment of geography has long been recognized as sound in principle; but never has it been so thoroughly developed in text form as here.

In Dr. Atwood's hands, material becomes concrete. A considerable portion of the text is given up to map studies, general review questions, and problem studies. Illustrations are ever made to suggest their own little problems; a bird's-eye view of the city of Panama, with the gulf beyond, carries the explanation, "This is the city of Panama. Can you explain how it is that the Pacific end is the eastern end of the canal?" A picture of Dutch fishing vessels says: "Along the shores of the Zuider Zee are little Dutch fishing villages. The fishermen build their trim little houses along the water-front and moor their boats close by. What kinds of fish do the Dutch fishermen catch? Why is the North Sea such an excellent fishing ground?"

The point of view and the natural curiosity of the child are refreshingly recognized. Another illustration says, "Here is a section of one of the great railroads of the state of New York, where six tracks run parallel to one another. Above each track is the signal which tells the engineer whether to go ahead or to slow down. If it is upright, the track is clear; if it is down, there is a train ahead."

Scarcely a text on the market today carries such a wealth of illustrative material: colored maps of each natural re-



gion; routes of ocean commerce with their exports and imports; lines of inland transportation; relief and vegetation maps; product maps; rainfall maps; maps of geographical explorations; aeroplane drawings of cities and their surroundings—to say nothing of the hundreds of carefully chosen pictures. Each illustration carries its own story; becomes a living thing.

Nor is geography a science sufficient unto itself. It is linked very closely to others. Human history develops where geographical conditions permit, and the connection between natural conditions and the history of settlements is strikingly clear. Here is a text bringing European history up to date: maps show settled and unsettled boundaries, territory controlled by the League of Nations, etc.

Certain refreshing departures from traditional textbook practices are evident. The usual sequence in the treatment of continents is not observed: Africa is interposed between Europe and Asia; Polar regions are treated separately as natural units. The last section of the text devotes itself to "The United States—a World Power," bringing out, in the light of the child's knowledge of other countries and peoples, our relationship to them. Finally, the quality of the printing—paper stock, type selections, half-tones and color work—is beyond criticism. The book is a product of art as well as scholarship.

To anyone privileged to know the Atwood text, the words on the title page become more than an empty statement: "A New World Lies Before Us."

★ ★ ★

### THE MOTION PICTURE HANDBOOK

F. H. Richardson

*Published by the Moving Picture World,  
New York City, Distributed by the  
Movie Supply Co., Chicago, Ill.*

Such a book as this is needed by those in charge of selecting and installing new

projection equipment, or maintaining equipment already in operation, and it is of especial value to every operator occupied with the handling and care of the machines.

It is a complete work for study and reference, notable for its clear definitions and descriptions, and is written in a readable style free from cumbrous technical language. The principles of electricity and electrical equipment, the mechanics of projection for both stereopticon and motion pictures, problems of the auditorium—such as arrangement, heating, lighting, ventilation, seating, booth-construction, etc.—every phase of the question is accurately and exhaustively covered. Constant revisions in the course of three editions have brought the manual to the point of completeness and thorough reliability. Lavish illustration by diagrams and photographs, and an adequate index, are features that make for still greater interest and usability and leave nothing to be desired in this valuable book.

★ ★ ★

### MOTION PICTURE ELECTRICITY

J. H. Hallberg

*Published by The Moving Picture World.*

This is a technical book of great value for any operator whose ambition is not content when he has learned the mere externals of his business. A study of this authoritative manual will enable the operator to handle his machines with ready understanding of the underlying principles and with intelligent appreciation of what is really going on. Motion Picture Electricity is a thorough treatise in reasonable compass. All problems confronting an operator are fully discussed—elemental principles of electricity, wiring, carbon setting, current control, etc.—as well as the use of the various units of equipment necessary to this work. Extensive reference tables are a large feature of the book. A reference index puts all this material within immediate reach.

# FILMS VIEWED AND REVIEWED

**T**HROUGHOUT the country, educators of all ranks are demanding films suitable for correlation with classroom work. "The Microscopical View of the Blood Circulation" is a film to make teachers of science rejoice, for it should be of the greatest value when properly handled in connection with such subjects as physiology, biology and anatomy. Notwithstanding the fact that this is a highly specialized film, it should prove of general interest because of the type of subject matter presented and the skilful treatment of the material.

Its three reels comprise a careful and comprehensive explanation of the functions of the heart and lungs, and of the blood, its ingredients and scheme of circulation. There is also an elaborate analysis of the living muscle and of bone tissue. All possible devices, such as lucid diagrams and animations, in addition to thoughtfully worded subtitles, have been used to render the processes easy to grasp. The heart of a chick embryo, of a horse and of a turtle serve as illustrations for much of the exposition. (*It should be said in passing, that the film is distinctly clinical.* However, the only views which could possibly make the audience a bit squeamish are those of the beating heart of the live turtle. The fact that this illustration is most apt for the purpose in hand, thoroughly justifies its frankness.) The film serves also as a splendid example of the efficiency of modern laboratory methods.

*To the Scientific Film Corporation belongs the distinction of making this film. It is a scholarly and significant achievement in the scientific field.*

This film is handled in the central west by The New Era Films, Chicago, Ill.

★ ★ ★

**T**HE Pathé Reviews (not to be confused with the Pathé Weeklies) are thoroughly worth including in serious programs for schools and communities. They are artistic and definitely educational. They offer the well balanced variety of subject matter always desirable

in weeklies, and in addition possess two features which are distinctive. One is the Pathécolor, an elementary color method which renders an artistic approximation to the natural colors. The tones are delicate and suggest most satisfactorily the color values of landscape. The second feature is the Novagraph, which analyzes motions too quick to be accurately comprehended by the eye by means of the Ultra Rapid Camera, which takes the successive pictures eight times faster than the ordinary machine. When these are projected at normal speed we learn that many things we have often seen were not really seen at all. The titling is good and the photography of the best. The Pathé Reviews are released through the Pathé Exchange, Inc.

★ ★ ★

**F**ILM producers recognizing the growing tendency of the American public to demand something instructive in connection with its motion picture diet, are continually on the alert for something to supply the demand. "Shipwrecked Among Cannibals," a recent Universal release, is a picture that can well be classed as educational.

The picture, made by Edward Laemmle and Wm. F. Alder, is a celluloid diary of their travels through the South Seas. These views of unfamiliar lands and of strange unfamiliar peoples can not fail to have an educational value, enlarging the spectator's horizon and making him alive to the fact that the world reaches far and that there are many things in it not conformable to his small Main Street code.

The camera men, after making some interesting reels of the first half of their journey through Siam, turned their attention to the Guineas, and, acting on their own risk against the advice of the Dutch authorities, secured a sailing ship, which was wrecked upon Frederick Henry Island. This island was the home of the Kia Kias, famed head hunters, whose disregard for human life was nothing short of magnificent. The pic-

tures of these hideous cannibals, their village, homes, and social life, are unique, adding a new and rare chapter to the information that the camera has accumulated about lands and peoples that have hitherto been inaccessible to the world at large.

These pictures were made when Laemmle and Alder were not quite certain which one was to furnish the entrée at a sumptuous banquet. The appetites of these barbarians were as horrid as their facial decorations and the explorers had great cause to recall the prayers of their infancy.

The photography and continuity throughout the reels are excellent. Many of the scenes are superb and all are interesting because of their remarkable subject matter. The picture is one that has fine educational possibilities if rightly used. There are naturally a few scenes that could be called rather "strong" and startling. *For school use, therefore, the age of the children viewing this film should be carefully considered and the picture should be viewed by the teacher in advance.*

★ ★ ★

**T**HE Charles Urban Movie Chats, produced by the Kineto Co., are delightful bits of genuine value. They seek primarily to entertain and run in the theatres, to be sure, but the materials chosen are of the sort that is good for the mind and the fancy at seven or seventy. Here are half a dozen topics that make up Chat IV, for instance:

(1) An English holiday crowd on the Thames watching the Henley rowing races; the vista of punts huddled close together along the course as far as the lens can see,—with pennants and paddles and picnickers gloriously jumbled during the excitement of a passing race; a colorful scene, teeming with life and movement, that makes the viewer want to know more of out-of-doors England.

(2) Close-up illustrations of the effects produced by a small electrical machine are suggestive of what can be done with Physics on the screen. The laboratory will soon have, not a rival, but a strong partner.

(3) The picturesque trade of gathering sea birds' eggs on the face of the Scotch crags is vividly shown. It thrills, for there is manifest risk in the work. These are legitimate thrills. The hardy Scotchmen have lived such lives for generations past. If we are to grasp fully how the rest of the world lives, we should feel what they feel. Let the American boy have the thrill the Scotch boy had the first time he went over the edge of the sheer cliff with but a slender rope to keep him from the hungry swirl below.

(4) Then monkeys in India, swarming on the temple steps, rapidly broaden the American child's common conception of a monkey as a component part of a hand organ.

(5) Next, many a grown-up learns with a bit of astonishment that camels are not always as passive as they seem. They fight. Many more grown-ups will here learn for the first time *how* camels fight.

(6) Finally, half a dozen glimpses of matchless Paris, under the witchery of sunset and the night sky.

A thousand feet of such stuff, titled with great skill and excellently photographed, seem short. There will be many reels in this series before the releases stop. School and community centers should remember the Urban Chats when their programs need "one more reel."

★ ★ ★

**A**TRIP Thru the Fastest Growing Automobile Factory in the World is a frank advertisement of the past and present activities of the Elgin Motor Works, Inc. It seeks to give an impressive survey of the work that will promote sales both of stock and product. However well the film may attain this primary purpose, we are still more interested here in another aspect of the production; namely, its general educational value.

America is justly world-famous as the land of swift-growing industries. Any film, therefore, which depicts with fullness and clarity such a distinctly American achievement is a document of genuine public value, whose secondary re-

sults are fully as important as the primary one sought by its makers.

The Elgin Company has just made such a film. (*It was viewed by us before the final editing, which will doubtless remove the minor defects then visible.*) The humble shed, which was the birthplace of the company, four years ago, gives place on the screen to a panorama of the elaborate plant as it stands today on its seventeen acres. Next, individual buildings, flashed before the eye in rapid succession, suggest the rapidity with which they were actually erected, while the work went on constantly under huge temporary tents.

The whole process is now shown in great detail, from the receipt of raw materials and parts and their disposal in immense storage rooms to the beautifully finished Elgin gliding home from its final outdoor test. Views of testing, machining, enameling, top-making, etc., follow, with numerous details of method in various departments. The film succeeds in giving an idea, not only of what is done, but how it is done.

Perhaps the most interesting feature is the great conveyor, two blocks long, which receives bare frames at one end, moves steadily past stations, each of which adds a new part, and delivers a finished car at the other end. In showing the work of this conveyor, and throughout the film, excellent use is made of animation drawings, which are often so much more effective than photographs of the object itself.

*This film has decided instructional value. It gives a vivid idea by this single concrete example of the great national activity in the particular line of auto-assembly. It reflects also the fine spirit that animates the workers throughout the plant and, above all, is alive with the sense of energy and expansion, qualities which are so characteristically American.*

★ ★ ★

**A**N industrial picture which has a close bearing upon the problem of commodity distribution has just been made at the Chicago laboratories of the Union Draft Gear Company. In these days of the freight car shortage assigned as the major cause of our present threatened coal famine, any factor aiding car conservation presents itself as a constructive measure of national significance.

The film in question pictures a remarkable series of tests made with a heavy drop hammer, using a 3-inch stroke at the start and gradually increasing to 46 inches, devised to parallel service conditions where the gear is in use with a train of heavily loaded freight cars. There was no breakage until the hammer had fallen from the 46-inch height, whereas a 3-inch drop represented the limit of strength in ordinary types of draft gear.

This film, which was produced by the newly organized Industrial Film Division of the Society for Visual Education, evoked enthusiastic comment when it was projected before a convention of railroad men in Montreal, September 14 to 16.

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### "Sign on the Dotted Line"

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ADDRESS.....

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# THE FILM FIELD

**I**N response to numerous inquiries from schools having projectors which are forced to stand idle for lack of usable materials, VISUAL EDUCATION has undertaken to supply information which will enable such schools to get satisfactory programs as they are needed. It is a difficult task which will require much time and effort on our part, and we ask merely patience on yours.

In this issue we list eighteen of the largest exchange systems in the country, with the address of each branch office. These concerns are occupied mainly, of course, with supplying theatrical material to professional exhibitors, but their stock usually includes a small percentage of "educational films." Schools desiring film material may write to the nearest exchange of any or all of the eighteen companies, requesting information available on films suitable for the particular purpose and occasion. (We would caution the school, when such information comes, to make due allowance for advertising phraseology and not to order a film solely on the strength of the company's fluent assurance of its educational worth. Films should be viewed by qualified judges before being shown to school children.)

We also list a few of the many "educational" films now on the market, with the exchanges handling them. When the film is not handled by any of the eighteen exchanges here listed, the name and address of the producer are given.\* If a school wishes to rent one of the films listed with its exchange, it is necessary merely to find the nearest branch of that exchange in the reference list and write for information concerning the film. If the film is not listed with one of the eighteen exchanges, write the producer indicated, asking him to name the point of distribution nearest the school.

Constant disappointment must be expected. Often the nearest exchange will not have a print in stock; or the film will be out and unavailable on the date it is needed; or the film will be worn and in bad condition; or the price will be hopelessly high; or the shipment will go astray; or slight attention will be paid to your communication; etc., etc.

In the course of time, however, as we are able to add more exchange systems to our reference lists, increase the number of titles in our film lists, eliminate films which have been withdrawn from circulation, and develop our department of films reviewed by the VISUAL EDUCATION staff, a semblance of order and some approach to satisfaction ought to come out of the present chaotic and discouraging situation.

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\* Addresses of producers named in the List of Films in this issue are as follows:  
Beseler Film Co., 71 W. 23d Street, New York City.  
Carter Cinema Co., 220 W. 42d Street, New York City.  
Educational Films Corporation, 729 Seventh Ave., New York City.  
Goodrich Rubber Co., Akron, Ohio.  
Henderson Films, 610 Masonic Temple, Chicago, Ill.  
Kineto Company of America, 71 W. 23d St., New York City.  
Lea-Bel Co., 64 W. Randolph Street, Chicago, Ill.  
New Era Films, 207 S. Wabash Avenue, Chicago, Ill.  
U. S. Dept. of Agriculture, Washington, D. C.

# Reference List of Commercial Film Exchanges

(Address all inquiries to the nearest exchange)

## AMERICAN RED CROSS

Atlanta, Ga. .... 249 Ivy St.  
Boston, Mass. .... 108 Mass. Av.  
Chicago, Ill. .... Pioneer Bldg.  
Cleveland, Ohio. .... Plymouth Bldg.  
Denver, Colo. .... 14th and Welton Sts.  
Minneapolis, Minn. .... 423 5th St. S.  
New Orleans, La. Wash'gt'n Artillery Hall  
New York City. .... 44 E. 23d St.  
Philadelphia, Pa. .... 134 S. 16th St.  
San Francisco, Cal. .... 864 Mission St.  
Seattle, Wash. .... White Bldg.  
St. Louis, Mo. .... Equitable Bldg.  
Washington, D. C. .... 411 18th St. N. W.

## FAMOUS PLAYERS-LASKY CORP.

Albany, N. Y. .... 33 Orange St.  
Atlanta, Ga. .... 51 Luckie St.  
Boston, Mass. .... 8 Shawmut St.  
Buffalo, N. Y. .... 145 Franklin St.  
Charlotte, N. C. .... 28 W. 4th St.  
Chicago, Ill. .... 845 S. Wabash Av.  
Philadelphia, Pa. .... 1219 Vine St.  
Cincinnati, Ohio. .... 107 W. 3d St.  
Cleveland, Ohio. .... 811 Prospect Av.  
Dallas, Texas. .... 1902 Commerce St.  
Denver, Colo. .... 1747 Welton St.  
Des Moines, Iowa. .... 415 W. 8th St.  
Detroit, Mich. .... 63 E. Elizabeth St.  
Kansas City, Mo. .... 2024 Broadway Av.  
Los Angeles, Calif. .... 112 W. 9th St.  
Minneapolis, Minn. .... 608 1st Av. N.  
New Haven, Conn. .... 132 Meadow St.  
New Orleans, La. .... 814 Perdido St.  
New York City. .... 729 7th Av.  
Oklahoma City, Okla. .... 128 W. 3d St.  
Omaha, Neb. .... 208 S. 13th St.  
Pittsburgh, Pa. .... 1018 Forbes St.  
Portland, Me. .... 85 Market St.  
Portland, Ore. .... 14 N. 9th St.  
Salt Lake City, Utah. .... 133 E. 2d South St.  
San Francisco, Calif. .... 821 Market St.  
Seattle, Wash. .... 2017-19 3d St.  
St. Louis, Mo. .... 3929 Olive St.  
Washington, D. C. .... 421 10th St. N. W.

## FIRST NATIONAL EXHIBITORS CIRCUIT, INC.

Atlanta, Ga. .... 146 Marietta St.  
Boston, Mass. .... 35 Piedmont St.  
Chicago, Ill. .... 110 S. State St.  
Cleveland, Ohio. .... 402 Sloan Bldg.  
Buffalo, N. Y. .... 215 Franklin St.  
Dallas, Texas. .... 1924 Main St.  
Denver, Colo. .... 1518 Welton St.  
Des Moines, Iowa. .... Garden Theatre Bldg.  
Detroit, Mich. .... 63 E. Elizabeth St.  
Indianapolis, Ind. .... 24 W. Washington St.  
Kansas City, Mo. .... 317 Gloyd Bldg.  
Los Angeles, Calif. .... 833 South Broadway  
Louisville, Ky. .... Nat. Theatre Bldg.  
Milwaukee, Wis. .... 402 Toy Bldg.  
Minneapolis, Minn. ....  
..... 408-18 Loeb Arcade Bldg.  
New Haven, Conn. .... 126 Meadow St.  
New Orleans, La. .... Tulane Av. & Liberty St.  
New York City. .... 6 W. 48th St.  
Oklahoma City, Okla. .... 127 S. Hudson St.  
Omaha, Neb. .... 314 S. 13th St.  
Philadelphia, Pa. .... 1339 Vine St.  
Pittsburgh, Pa. .... 414 Ferry St.  
Richmond, Va. .... 904 E. Broad St.  
St. Louis, Mo. .... New Grand Central Theatre  
Salt Lake City, Utah. .... 136 E. 2d South St.  
San Francisco, Calif. .... 134 Golden Gate Av.  
Seattle, Wash. .... 2023 3d Av.  
Washington, D. C. .... 916 G St. N. W.

## FOX FILM CORPORATION

Atlanta, Ga. .... 111 Walton St.  
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Omaha, Neb. .... 315 S. 16th St.  
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Cleveland, Ohio. .... 404 Sincere Bldg.  
Dallas, Texas. .... 1924 Main St.  
Denver, Col. .... 1721 California St.  
Detroit, Mich. .... 51 Elizabeth St. E.  
Kansas City, Mo. .... 928 Main St.  
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Milwaukee, Wis. .... 174 2d St.  
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Omaha, Neb. .... 1417 Harney St.  
Philadelphia, Pa. .... 211 N. 13th St.  
Pittsburgh, Pa. .... 938 Penn Av.  
Salt Lake City, Utah. .... 64 Exchange Place  
San Francisco, Calif. .... 985 Market St.  
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Philadelphia, Pa. .... 1219 Vine St.  
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Los Angeles, Calif. .... 736 S. Olive St.  
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New York City. .... 126 W. 46th St.  
Omaha, Neb. .... 1512 Howard St.  
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Denver, Col. .... 734 Welton St.  
Detroit, Mich. .... 63 E. Elizabeth St.  
Kansas City, Mo. .... 17th and Main Sts.  
Los Angeles, Cal. .... 643 S. Olive St.  
Minneapolis, Minn. .... 608 1st Av. N.  
New Orleans, La. .... 420 Camp St.  
New York City, N. Y. .... 1600 Broadway  
Omaha, Neb. .... 1111 Farnum St.  
Philadelphia, Pa. .... 1227 Vine St.  
Pittsburgh, Pa. .... 117 4th Av.  
St. Louis, Mo. .... 3310 Lindell Blvd.  
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Produced by various commercial companies and intended for general educational use. All entries are 1 reel (1000 ft.) in length unless otherwise specified.

(In offering these selections, VISUAL EDUCATION in no way guarantees the value or suitability of the films. This can be done only when we have personally viewed the picture. The list represents merely the most careful choice possible to make from data given out by the producing companies. VISUAL EDUCATION will continue to give brief critical reviews and synopses of important "educational" releases each month. Only the films so reviewed by our staff should be considered as having VISUAL EDUCATION's recommendation, qualified or unqualified as the case may be.)

### TRAVELOGUES AND SCENICS

**WHITE SILENCE.** (Burton Holmes) (Famous Players-Lasky) A wonderful scenic reel illustrating Whittier's poem "Snow-Bound."

**VESUVIUS.** (Burton Holmes) (Famous Players-Lasky) Many of the thrilling details that make a crater in action a most convincing natural phenomenon; views of the reconstruction of old dust-covered Pompeii.

**THE UPPER NILE.** (Burton Holmes) (Famous Players-Lasky) Through the temple of Isis, by the tombs of the Pharaohs, you are floated on the waters of the Nile from ancient Egypt to modern.

**THE LAND OF THE LAOS.** (Burton Holmes) (Famous Players-Lasky) Views of the interior of Siam with glimpses of the home life and customs of the Siamese.

**FIRE WALKERS OF BEQUA.** (Burton Holmes) (Famous Players-Lasky) The Bequa Islands, one of the groups of the Fiji Islands, with interesting views of significant dances and feasts and of Fiji fanatics martyring themselves on hot stones.

**ORIENTAL FIGHTING MEN.** (Burton Holmes) (Famous Players-Lasky) Soldiers from Northwest India in manoeuvres, and in their hours off duty.

**GLORIOUS VERSAILLES.** (Burton

Holmes) (Famous Players-Lasky) Beautiful views of the place that still reflects the splendor of the past.

FILIPINO SCHOOL DAYS. (Burton Holmes) (Famous Players-Lasky) A picture that gives much information concerning the progress of modern educational methods in this far-away land.

THE VALLEY OF TEN THOUSAND SMOKE. (Educ. Film Corp.) This is not exactly what the title indicates but is an unusual picture of a valley in Alaska where large quantities of steam charged with hydrofluoric acid escape.

POLO AND ROCKS OF POUMANACH. (Educ. Film Corp.) The first part of this reel deals with the game of polo shown in slow motion pictures. The second part shows the weird rocks of Poumanach in Brittany.

PIGS AND KAVA. (Educ. Film Corp.) One of the South Sea Isles is the scene of a Chester travel reel. Tropical scenery, natives in weird dances, and celebration of festivals, make up this unusual and interesting picture.

WHEN DREAMS COME TRUE. (Chester Scenic) (Educ. Film Corp.) Pictures of the old wall of China that has watched the seasons pass for two thousand years.

INDIA, THE LAND OF MYSTERY. (Educ. Film Corp.) This reel includes views from Lake Dal, the city of Madeira, the Bay of Bengal, city of Benares, and the Ganges River. At the very end come pictures of kittens and puppies of any land.

ONE DROP WAS ENOUGH. (Educ. Film Corp.) A trip down a South American river to a large and beautiful series of waterfalls.

THE CASTAWAY. (Bruce Scenic) (Educ. Film Corp.) A slight plot of a shipwrecked sailor who finally finds contentment on his desert island gives opportunity to show the sea in many moods.

OLD BUDDHA'S MAZE. (Chester Outing) (Educ. Film Corp.) The quaint architecture of picturesque Peking with views of street and temple scenes.

PYRENEES AND WOODEN LEGS. (Chester Outing) (Educ. Film Corp.) Scenes in the rocky heights of the small republic, Andorra.

THE SONG OF THE PADDLE. (Bruce Scenic) (Educ. Film Corp.) The paddle sings through many waters from the Skagway to the coast of British Columbia in this beautiful picture.

THE TITAN OF CHASMS. (Carter Cinema Co.) To the Grand Canyon of Arizona is applied this striking title.

THE LURE OF THE MAINE COAST. (Carter Cinema Co.) Attractive pictures of the beauties of this historic section.

IN AND AROUND KEY WEST. (Universal) Varied scenes of the customs, industry of cigar making, etc.

ROME. (Universal) A picture showing many points of interest about the city, including the gates and hills that antiquity knew, with views of the monks of today.

THE LONE TRAPPER. (Robertson-Cole) An adventure scenic showing a trapper placing his traps, journeying over the deep snows, and returning home with skin of the silver-haired fox.

THE COOLIE. (Select) Man power apparently runs the business of China, as this picture would show.

BRETONS OF THE SEA. (Select) Views of an old fishing village of Brittany and of its fishing fleet that are interesting and quaint.

THE GRAND CANYON. (Republic) Led by Indian guides, we are shown the wonders of this magnificent gorge.

OUR NATIONAL PARKS. (Pathe) Rainier Park with its glorious mountains, waterfalls, forests and glaciers is the subject of this reel.

THE YELLOWSTONE. (Pathe) One-half reel. Many of the things of interest that travelers are eager to see are shown in this picture.

SINGAPORE. (Pathe) The Orient is always fascinating and the views of this great eastern city will be most entertaining.

OLD PLYMOUTH. (Ford Weekly) (Goldwyn) As the tercentenary celebration of the landing of the Pilgrims draws near, this picture should be of unusual interest.

THE HOME OF THE SEMINOLES. (Ford Weekly) (Goldwyn) The emphasis in this picture is placed upon the study of the habits of the Indians, rather than upon the natural surroundings.

IN SAMOA. (Beseler) Many things of curious interest; among them a Samoan chief and his daughter, girls in the Mission School, the gathering of cocoanuts, the Liva-Liva dance, catching fish with dynamite, etc.

HOW A LETTER TRAVELS. (Beseler) You travel with this letter from the African jungle by devious routes to its destination in Paris.

MOSQUES AND TURKISH PALACES. (New Era) The average public has little idea of the splendors of these oriental residences. They are shown here in all their beauty.

A TRIP THROUGH BOSNIA, AUSTRIA. (New Era) Pictures showing this country before it was laid waste by war. Among the towns of interest portrayed is the City of Sarajevo, which has gone down in history as the birthplace of the World War.

THE CATELONIAN COAST. (New Era) A colored travelogue of the rugged coast of Spain. In this reel are also found scenes of Mt. Blanc, Temples of India and the Abbey of Paris.

ON THE BANKS OF THE ZUYDER-ZEE. (New Era) Beautiful Dutch landscapes and intimate glimpses of the everyday life of these interesting people. On this same reel will be found scenes of Heligoland, the once famous Teuton fortress in the North Sea.

THROUGH PICTURESQUE SWITZERLAND. (New Era) Midwinter scenes taken from a moving train as it wound its way among the mountains from Sويسnen to Spliez.

## INDUSTRIAL FILMS

CURRENT OCCURRENCE. (Ford Weekly) (Goldwyn) The making of the parts and assembling of an electric iron and electric percolator.

PLAYTHINGS OF CHILDHOOD. (Ford Weekly) (Goldwyn) Some of the processes that dolls, toys, pianos and doll houses must go through before they are ready for the nursery.

GOOD ROADS. (Ford Weekly) (Goldwyn) A contrast between old roads and new that shows clearly the need for good roads.

BROKEN SILENCE. (Ford Weekly) (Goldwyn) A visit to a day-school for the deaf, dumb and blind.

SEE-SAW. (Ford Weekly) (Goldwyn) A clear exposition of the manufacture of different kinds of saws.

JUST WRITE. (Ford Weekly) (Goldwyn) How fountain pens are made.

CONSTRUCTION OF A CONCRETE SILO. (U. S. Dept. of Agric.) Process of building a concrete silo.

**CONSTRUCTION OF A WOODEN HOOP SILO.** (U. S. Dept. of Agric.) Method of construction of a silo built of wooden hoops and staves.

**MILK AND HONEY.** (U. S. Dept. of Agric.) 2 reels. A dairy romance in which methods of conducting a modern dairy are shown as part of the story.

**TYPES OF HORSES AT WASHINGTON HORSE SHOW** (U. S. Dep't of Agric.) 2 reels. Types and individual horses which won prizes at the Horse Show.

**WORK OF THE FOREST PRODUCTS LABORATORY.** (U. S. Dept. of Agric.) Work at the Forest Products Laboratory, Madison, Wis., testing the preservative treatment of timber, manufacture of paper, methods of service to manufacturers.

**CONGRESSIONAL SEED DISTRIBUTION.** (U. S. Dept. of Agric.) Testing, storing, and packaging of some of the 14,000,000 packages of seed sent out by the Department of Agriculture in 1913-1914.

**MACADAM ROAD CONSTRUCTION.** (U. S. Dept. of Agric.) The construction of a macadam road in Maryland.

**THE LAND OF COTTON.** (General Electric) Two reels. Depicting the cotton industry from the planting of the seed to the finished fabric. The film was produced at one of the largest cotton plantations in the South, at one of the largest cotton terminals and at one of the largest textile mills.

**FAIRY MAGIC.** (General Electric) Two reels. Manufacturing operations in producing electric lamp sockets with suggestions as to "Safety First" methods.

**TURNING OUT SILVER BULLETS.** (New Era) Showing the evolution of a coin from the crude metal to the finished product.

**BOYS' WORKING RESERVES OF ILLINOIS.** (Henderson Films) Three reels. An official picture made in cooperation with the State Council of National Defense, showing most clearly and comprehensively the activities of the Boys' Working Reserves during the war.

**COD FISHING IN THE ATLANTIC.** (Beseler) The shores of Iceland and grim Newfoundland furnish the setting for this picture of the great industry of cod fishing.

**CATTLE INDUSTRY IN NEW MEXICO.** (Beseler) A film that includes many phases of the industry, such as disinfecting, shipping and inspecting. There are also glimpses of the sheep industry.

**FLORIDA'S STRANGE INDUSTRIES.** (Beseler) Some of these industries that are shown in this reel are crab fishing, turtle catching and sponge fishing.

**WINTER LOGGING IN MAINE.** (Beseler) As the title indicates, an interesting picture of this picturesque industry.

**INDUSTRIES IN TENNESSEE.** (Beseler) Asbestos quarry and works where this mineral is made into articles of commerce; coke industry with its various processes.

**STORY OF THE ORANGE.** (Pathe) Picking ripe fruit, planting seed, washing and planting trees, pruning, fumigating trees; the culinary uses of the orange.

**OAHU.** (Select) The pineapple industry on the Island of Oahu of the Hawaiian group, showing the various stages from seed planting through canning.

**SILKS AND SATINS.** (Universal) Two reels. This film from the Bureau of Commercial Economics portrays the silk industry from the beginning to the end.

**THE POTTER'S WHEEL.** (Educ. Film Corp.) The manufacture of electrical porcelain.

**PICTURESQUE INDUSTRIES OF MEXICO.** (Educ. Film Corp.) Fishers of Lake Texaco; making nets for fly-eggs; making adobe bricks; moulding the bricks; making Mexican sandals by hand; Mexican feather work of the Aztecs.

**OUR WINGS OF VICTORY.** (Visual Instruction Dept. U. S. Bureau of Education) Two reels. Process of making airplanes; the assembling of material and the manufacture of the different parts, motors, propellers, etc. Tests of machines, training of aviators, types of planes, and air fleet in formation.

**MAKING THE DESERT BLOSSOM.** (Visual Instruction Dept. U. S. Bureau of Education) Two reels. Irrigation projects of the West, such as the Yakima project, the Roosevelt Dam, Elephant Butte Dam, etc. Process of irrigation, use of tractor planters, machine digging potatoes, loading alfalfa.

**THE STORY OF A TIRE.** (Goodrich Rubber Co.) An exhaustive study of the processes through which rubber passes from the time it is raw material on the New York piers to the finished product in the factory.

## BIOLOGY AND THE NATURAL SCIENCES

**STARTING LIFE.** (Ford Weekly) (Goldwyn) A deviation from the usual run of Ford pictures. The reel consists of scenes of lambs, kittens, pups, fowls, pigs, ponies, etc.

**FOREIGN DEER.** (Educ. Film Corp.) Deer that habitat in South America, Europe and Asia, taken from Ditmars' Living Book of Nature.

**MODERN CENTAURS.** (Educ. Film Corp.) An offering with feats of horsemanship, remarkable and thrilling in most cases, and where they are not remarkable, executed with unusual ease and grace.

**THE WOLF OF THE TETONS.** (Educ. Film Corp.) A Bruce Scenic featuring a wolf dog and a hound, which meet and then in the bonds of friendship, hunt and fish together; pictures of a brown bear crossing a pole over a stream.

**TREE ANIMALS.** (Educ. Film Corp.) A Ditmars picture showing the wonderful possibilities of filming creatures of the night; pictures also of the honey bear, Brazilian opossums, flying Phalanger.

**ASPHYXIATING GASES.** (Educ. Film Corp.) One-half reel. Sulphur, chloride, bromide formation.

**SIMPLE EXPERIMENTS IN ELECTRICITY.** (Beseler) Electricity by induction, etc.

**PICTURES IN CHEMISTRY.** (Beseler) Combustion of sulphocyanide, of ammonium, destruction of chalk, electrolysis of water, destruction of silver wire by nitric acid, etc.

**GEOLOGY—Part 1.** (Beseler) An explanation of the formation of ice, with an additional account of the production of artificial ice. Winter sports.

**MUSHROOM CULTURE.** (Beseler) One-



half reel. The preparation of the soil, planting of the spawn, and specimens.

**PLANTS WITH NERVES.** (Beseler) One-half reel. Mimosa, common meadow plant, showing reaction of blows, electricity, chloroform; also an exposition of plants that eat.

**BIRD LIFE STUDY—Part 1.** (Beseler) South African ostrich, Australian bustard, black hornbill, wren, robin, starling and many other birds of great interest.

**WILD ANIMAL STUDY.** (Beseler) South American tapir, Indian rhinoceros, Red River hog, wart hog, hippopotamus, elephants, etc.

**INSECT LIFE.** (Beseler) The ant and its habits, female ant, the male drones, ant hill, eggs, inside of nest, cocoons, ant hauling match, the ant lion.

### FILMS OF LITERARY AND HISTORICAL INTEREST

**YOUR OBEDIENT SERVANT.** (New Era) Three reels. Adapted from Anna Sewall's story of "Black Beauty," featuring Don Tulano, a horse. Black Beauty tells his own story of his happy youth on a Kentucky blue grass farm.

**RIDE OF PAUL REVERE.** (New Era) The historic ride of Paul Revere, photographed on the actual scene of his ride. The captions are lines of Longfellow's poem.

**THE PIED PIPER OF HAMLIN.** (New Era) The old folk tale.

**ALADDIN AND HIS WONDERFUL LAMP.** (Fox) Eight reels. The Arabian Night story that never will grow old.

**ALI BABA AND THE FORTY THIEVES.** (Fox) Five reels. The original thrills that accompanied the reading of this story will return when the picture is viewed.

**SON OF DEMOCRACY.** (Famous Players-Lasky) Ten episodes in two reels. A remarkable series of pictures portraying various periods and important events in the life of Abraham Lincoln. The value of these pictures cannot be overemphasized. They are splendid for teaching patriotism, loyalty and kindness, in addition to their historical interest.

**THE BOSTON TEA PARTY.** (Beseler) Two reels. Such a colorful event as the Boston Tea Party can not fail to be interesting when filmed.

**EDGAR AND THE TEACHER'S PET.** (Goldwyn) Two reels. An amusing and well-done treatment of boyhood's dreams and cares. One of the Booth Tarkington series.

**FROM THE MANGER TO THE CROSS.** (Vitagraph) Six reels. A complete life of Christ, photographed in Palestine, and one of the best of its kind.

**RIP VAN WINKLE.** (Lea-Bel Co.) Five reels. Joseph Jefferson is featured in this reproduction of Irving's immortal tale.

### WEEKLIES, NEWS ITEMS AND REVIEWS

**PATHE NEWS 59.** (Pathe) Experiments at Marshfield, Mass., with incubators for raising pheasants newly-born; Resolute in race for America's Cup; ship-building at Hog Island; school athletics in Joinville, France; return of U. S. sol-

diers from Russia; meeting of allies with Germans at Spa, etc.

**PATHE NEWS 61.** (Pathe) Parade in Belfast; delivery of German Zeppelin to France; ascent of Mt. Hood; acceptance of Republican vice-presidential nomination by Coolidge; winning of the Cup by Resolute.

**PATHE NEWS 62.** (Pathe) Dedication of French monument to Wilbur Wright; first trans-continental air boat; "wild west" days in Cheyenne, Wyoming; cartoon.

**INTERNATIONAL NEWS Vol. 2-45.** (Universal) Washington, D. C., Cox and Franklin hold conference; U. S. soldiers arriving in San Francisco from Russia; final trials for Olympic stars at the Harvard Stadium; pictures of the second international yacht race, etc. (Cut cartoon.)

**PATHE REVIEW 46.** (Pathe) Color scenes from Biska, North Africa; Novagraph photograph of elephant and seagulls; study of turtles made in the Ditmars Studio; mining in Mexico.

**PATHE REVIEW 50.** (Pathe) Colored scenes laid in the Orient; floating of new buoys; slow motion picture of French athlete; contribution from Ditmars' Studio showing the feeling of animals for music; making of Seidlitz powders; Spanish fandango danced by two famous Spanish señoritas.

**PATHE REVIEW 59.** (Pathe) Pathe-color scenes from Lisbon; study of monkeys from Java, Ceylon and India made by the Ditmars' Studio; Novagraph film, the Nautch dance from East India.

**PATHE REVIEW 61.** (Pathe) Colored scenes from France; process of cod fishing from catching to packing; Novagraph picture showing maneuvers of a tumbler slowed down eight times; uncommon birds photographed at the Zoological Garden.

**PATHE REVIEW 62.** (Pathe) Pathe-color, scenes in Switzerland; Novagraph film, balancing; retreading old tires; building a gown on Fifth Avenue; Russian dance.

**BRAY PICTOGRAPH 436.** (Goldwyn) The shipping of long horned steers from Venezuela; cock fighting in Venezuela; the filming of a Rex Beach production; animated cartoon.

**BRAY PICTOGRAPH 437.** (Goldwyn) Scenes showing the activities of the Traveler's Aid Society of New York City; master minds of America, the American painter, Childe Hassam at work; new process of etching; Out of the Ink Well cartoon.

**CHAS. URBAN'S MOVIE CHATS 10.** (Kineto Co. of America) The London Fire Dept. gives a demonstration; oyster fishing and industry in England; a startling bulldog nest in chimney, etc.

**CHAS. URBAN'S MOVIE CHATS 25.** (Kineto Co. of America) Scenes from the river Dee, Aberdeen, Scotland; London North Western Railroad cultivates willows, making baskets and willow hampers for light transportation; the giant dragon fly, honey bee, wasp, bumble bee, action of tongue of bumble bee.

**CHAS. URBAN'S MOVIE CHATS 6.** (Kineto Co. of America) Greek colony of sponge fishers at Tarpon Springs, Florida; views of animals; panorama of Jerusalem; microscopic views of insects.



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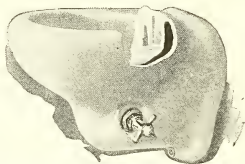
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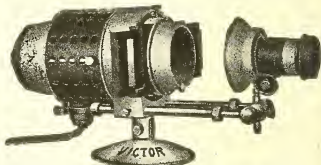
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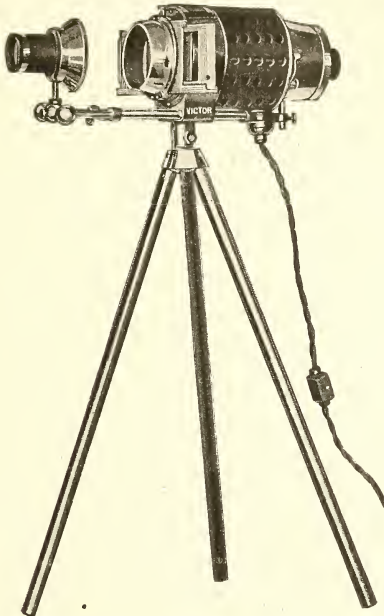


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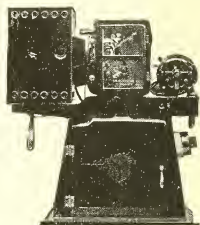
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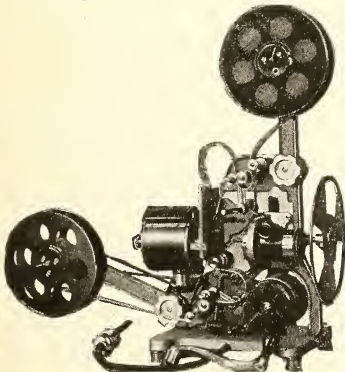
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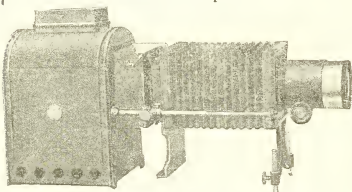
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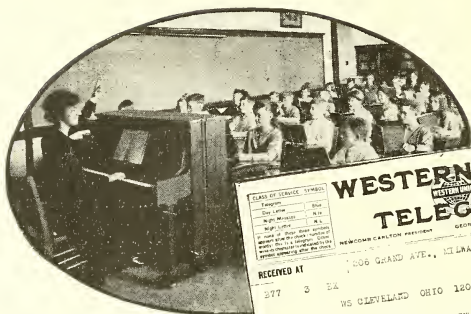
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# VISUAL EDUCATION

A Magazine Devoted to the Cause of American Education

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Vol. I.

NOVEMBER, 1920

No. 6

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## In This Number

Visual Health Education in Grammar  
Schools

*C. E. Turner*

Basic Material in Education

*P. P. Claxton*

The Working Museum Visualizing  
History

*E. C. Page*

Visualizing Mythology

*G. P. Smith*

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**CHICAGO, ILLINOIS**

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# VISUAL EDUCATION

A MAGAZINE DEVOTED  
TO THE CAUSE OF  
AMERICAN EDUCATION

ROLLIN D. SALISBURY, President  
HARLEY L. CLARKE, Manager

FOREST R. MOULTON, Secretary  
NELSON L. GREENE, Editor

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DEC 27 1920

# VISUAL EDUCATION

*A National Organ of the New Movement in American Education*

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Volume I                      NOVEMBER, 1920                      Number 6

## Editorial

THE development of modern science pretty thoroughly exploded the idea of "perpetual motion," although this idea has engrossed the mechanically-minded since man began his creative thinking. The basic principle of "perpetual motion is that still more venerable fallacy, the idea of SOMETHING FOR NOTHING "getting something for nothing," which the development of modern business has done much to destroy. It dates from the days before bank accounts and apartment houses; when a living could be had for the picking, without money and without price, and when any old branch was "home."

Consider for a moment, however, the "getting" of a modern magazine, which comes dangerously near to being a "something for nothing." To be specific, take VISUAL EDUCATION.

Our subscribers pay ten cents, our readers pay fifteen cents—for a copy which costs its makers twenty-four cents, exclusive of overhead expense! Obviously we cannot undertake or pretend to do philanthropy. Our friends who read would manifestly be "getting something for nothing" were it not for our equally good friends who advertise. The latter, in turn, are entirely willing to bear the lion's share of the cost if a fair return on their investment is forthcoming. The circle is complete with its three segments, but no segment must fail. The advertisers will take care of us; PLAIN FACTS we will take care of our readers; *but our readers must take care of our advertisers.* Keep the circle intact!

Therefore, buy your magazine for a fraction of its cost; read it, ads and all; then, send your orders to the advertisers, your criticisms to the editor.

We are aware that the above is purest platitude. This is not information; it is merely a reminder. We have used twenty square inches of our precious paper stock in this fashion solely because we know that the best known facts are often the most easily forgotten.

THE interest in visual instruction is not confined to organizations and publications specializing in the field; witness the following editorial which appeared in the September number of the Quarterly Bulletin of the International Federation of Catholic Alumnae. Because such an utterance from an independent and impartial source is strong evidence of the wide appeal of the movement, and because the Bulletin's ideas upon the question accord precisely with our own—VISUAL EDUCATION has obtained permission to reprint the article entire.

"The present movement towards visual education has had a remarkably rapid growth. A few years ago the visual idea was hardly more than a hobby in the minds of a few; now it is a nation-wide demand. It has gained possession of four great fields of educational interest, viz.: academic, religious, civic and industrial. The picture is coming to be considered and demanded as a mental stimulus of unequalled value in schools and colleges; in the broad field of religious thought and activity; in social centers and industrial organizations.

"The Catholic Church has marked the way for the extensive use of this new instrumentality in education, by appropriating through the National Catholic War Council a large sum for the development and extension of the motion pictures on a capacious scale throughout the entire country. An elaborate system of distribution by autos, and the services of trained lecturers are included in the comprehensive plan. Other religious bodies have followed rapidly with similar plans and appropriations.

"All innovations are subject to the law of inertia; the hardest thing is to get them moving; but the number of thinking men and women who still doubt the value of this new idea, is rapidly diminishing. There was a time, for instance, when "textbooks" were viewed with skepticism and apprehension. "Why make textbooks about literature when you have the literature itself accessible?" "Why supplant the truth with a weak dilution of the truth?" Such objections and others still more caustic, were hurled at the innovation which seemed to threaten the foundations of sound learning and destroy all hope of the ultimate attainment of wisdom. Today we can but smile at such thoughts when we recall the millions of textbooks now doing their mighty work in schools, colleges and universities; in evening classes and settlement houses; in a myriad of homes from coast to coast.

"Strange as this period in the history of textbooks now appears, we are in exactly the same period in the history of 'textfilms.' Warnings are still cried occasionally against 'making education easy,' 'removing the incentive to effort,' etc., but this chorus is becoming faint and feeble. The country sees more and more clearly every day that pictures—and above all the motion picture—will make education easy only in the sense that we can now achieve more quickly all that has previously been achieved in education, and thus open the way to a richer, deeper and broader training for the nation without the expenditure of any more time and effort than before. The crowded schedule of modern life

relentlessly limits the time we can devote to assembling our mental equipment, and therein lies the strongest argument for the picture. The objection to accomplishing more in the same time than we have previously been able to accomplish, is too illogical to stand.

"As a matter of fact the motion picture is but a logical and scientific development of the "object lesson" method of teaching and is as infinitely superior to that method as the teaching by objects was to the lumbering methods that preceded it.

OCCASIONAL  
FAILURES  
TO BE  
EXPECTED

"What, then, is the vital element in the whole question of visual education? On what does the potency of the new forces depend? The answer is, the content and quality of the film.

"Bad textbooks have injured, and still injure, the cause of education. Bad textbooks have been produced in great numbers, yet these facts do not shake the faith of the educational world in good textbooks. In like manner, faulty films have been produced by the millions of feet—and among them, films conspicuously labeled educational. It is also true that not a few intellectual people have viewed these faulty attempts and honored them with an approval which only the productions of qualified scholars would deserve. In general, however, judgment upon such productions has been adverse, and some have made the absurd mistake of supposing that such verdict makes a case against "educational films." Parallel instances could be cited. The canons of architectural art are seriously violated in a grain elevator, a rolling-mill, or a brick-yard, yet critics do not condemn Architecture on such grounds. On the contrary, they approve such structures, for they bear in mind the builder who made them and the end he sought to achieve. Similarly, the mass of pseudo-educational films that clog the market today—and still more the storage shelves of their disappointed producers—should be judged with the same reservations in the mind of the judge. He must remember the makers of such films and the ends they sought and seek. Ruskin did not derive his art canons from a study of Manchester factories or Liverpool warehouses; no more will American exponents of the teaching art base their valuation of educational motion pictures on what the movie-makers have achieved thus far.

"If, then, the worth of the whole idea depends on the character and quality of the film to be used, it is pertinent to ask, 'Are there such things as good educational films?' The answer is emphatically yes. They are being made today

REAL  
EDUCATIONAL  
FILMS

for use in the schools by at least one organization in this country, namely the Society for Visual Education. This society, recently incorporated in Chicago, has a personnel of eminent educators which alone is ample assurance of the quality of productions to be expected.

In practice the films produced are classified under several subject headings, those of each subject being produced under the direction of a distinct committee, each member of which is an acknowledged authority on the particular subject. The chairman of each committee is a scholar of national eminence, and thus each film is authoritative in the same degree as a textbook would be with the same scholar's name on the title page.

"From this organization or a similar one, must come the materials for which forward-thinking educators have long been waiting. The country is no longer under the necessity of attempting visual instruction by nondescript films, which are usually little more than by-products of the theatrical business. The day of real 'textfilms' is here and a great step toward the better training of Americans, in school and community, is assured by the new activities. The Bulletin of the International Federation of Catholic Alumnae greets the advent of the Society for Visual Education with heartiest approval."

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FIRST efforts in any line are likely to be both modest and heroic. This is true of the introduction of visual methods in American schools. We say "modest," because in the present paucity of materials, especially films, such efforts can seldom be anything else. We say "heroic," because trail-blazing is hard and the majority of folk insist upon waiting for the macadam highway.

We are living in the pioneer days of visual instruction, when the beginners are the only veterans. The best possible encouragement to schools now considering the adoption of the new methods will be to hear what the "veterans" have done. The humbler these beginnings—the more stubborn the difficulties met and overcome—the more valuable will be the story as an incentive to those who have as yet done nothing at all. Therefore, we are making the following request to the hundreds of American schools who have made their start:

HELP  
WANTED

Send us a brief, but detailed and informing account of what is being done in your school along visual lines. VISUAL EDUCATION will maintain each month a department for printing these accounts, and will see to it that they reach thousands who are genuinely interested.

---

THERE is a growing demand among our readers and subscribers for back numbers of VISUAL EDUCATION. They are now anxious to have their files complete. We anticipated this demand from the beginning and made what we considered adequate arrangements to meet it, but we underestimated the requirements. Now the expense of supplying these back copies is many times greater than for copies of the current issue sent out in regular mailings.

BACK  
NUMBERS

*Hereafter, therefore, the price of back numbers of VISUAL EDUCATION will be 25 cents a copy.* This does not mean that we can always supply them, but we shall be glad to do so as long as we have any on hand or can secure them from chance sources.

# VISUAL HEALTH EDUCATION IN GRAMMAR SCHOOLS

C. E. TURNER

Assistant Professor of Biology and Public Health, Massachusetts Institute of Technology,  
Cambridge

**W**HAT should grammar school children be taught about health? Can the motion picture be made an effective aid in teaching hygiene?

The first question has received much consideration from both educators and public health experts. The second question was presented to the writer at a time when he was busy developing and improving the process of taking motion pictures through the microscope. This investigation had been undertaken in co-operation with an instructor in photography at the Institute of Technology because it promised returns both in the field of biological research and in that of education. So great, however, seemed the importance of the task undertaken by Dr. Vaughan and his Health and Sanitation Committee of the Society for Visual Education that all the work previously done in this direction has been turned for the present toward aiding the solution of the problem of health instruction in grammar schools. The following discussion is in the form of an answer to the above questions.

## THE CASE FOR HEALTH EDUCATION

The question of what to teach is linked with the question: "Why should we teach health?" Everyone appreciates the importance of hygienic living, especially if he is able to remember and contrast a period of sickness with a period of buoyant health in his own experience. Sweet as may be the fruit

of the tree of knowledge, nothing is sweeter than life itself—life not embittered by the canker of disease. "A sound mind in a sound body" is still in favor among educators, although, as Prof. Wm. T. Sedgwick points out, "Nowadays we know only too well that the sound mind and the sound body are unavailing for the conduct of normal living unless the environment with which they have to deal consists of fairly good air, fairly pure water, fairly good food, and is fairly free from communicable diseases, unfavorable temperatures, defective ventilation, dirt, noise and other prejudicial sanitary conditions."

The last three decades have given us a new science of disease prevention and a new story of health preservation through proper care of the human mechanism. The maintenance of public health has become increasingly a function of government. In a democracy like ours this function progresses step by step with public information regarding its importance and soundness; for the health activities of the government must win the approval and support of the people. It has become important, therefore, that we should instruct our great body of citizens-to-be in community health as well as in the care of their bodies before they leave the public schools.

When the draft statistics informed us that one-third of our men of military age were unfit for service, there



was an immediate response to the implied suggestion that we should take better care of the health of our school children. This is already resulting in better medical supervision as well as in more consideration for the teaching of hygiene; and we may hope that our work in school hygiene will eventually equal or surpass the work of the European countries which have hitherto led us in this field.

Perhaps a more direct suggestion for the teaching of hygiene is to be found in the statistics which indicate that we are making rapid progress against diseases which are controllable by proper sanitation, but very slow progress against those diseases which are to be controlled only through the personal hygiene of the individual. Our army records give the best data, for there medical and health authorities had direct supervision. The death rate was commendably low, and the fatalities from enteric and insect-borne fevers, which had caused so many deaths in previous wars, were practically negligible. The great causes of death were the respiratory diseases. Here personal hygiene and not sanitary supervision is the important factor.

Health experts are well agreed that the great saving of lives in the next generation is to be accomplished through the teaching of the fundamental facts of personal and preventive hygiene. An appreciation of this has already stimulated the colleges to strengthen the teaching of hygiene, and almost every institution of higher



THE CHILDREN ARE INTERESTED IN THE NEW KIND OF GARDEN

education has recently enlarged or is contemplating an expansion of its health activities.

The public health nurse has assisted health officials to save thousands of lives because she added the personal touch to health information and gave her instruction individually. The same personal contact exists in the school-room, and those educators, both administrators and teachers, who are providing live, practical and interesting health instruction are adding immeasurably to the health and happiness of our rising generation.

We know that if there are things which we desire the next generation of



MAKING NEW GARDENS IS LIKE MAKING GELATIN PUDDING

Americans to possess, those things we must put into the public schools. Surely we want health in the next generation.

#### WHAT TO TEACH

But what should be taught? The subject of hygiene naturally divides itself into two phases: personal hygiene, or the care of the body mechanism, and preventive hygiene, or the cultivation of living habits which enable us to avoid infectious diseases.

#### PERSONAL HYGIENE

The proper use of the body in the

the heart, the lungs, the eyes, the teeth, the skin? What purposes are served by the different kinds of food? What is the relationship between ventilation and health? What is desirable exercise and what are its benefits? What effects have anger, worry and the other emotions? These are some of the pertinent questions concerning this phase of the subject.

The answers to these questions can only follow a knowledge of certain body structures and functions, but this does not mean that a detailed knowledge of anatomy and physiology must precede



THE SOIL IS STERILIZED TO KILL THE WEEDS

normal activities of life is an old subject, but never has it had more importance. Never has there been a greater temptation or tendency for great masses of our population to avoid a normal and vigorous physical life. It is the unused or seldom-used machine that is in the greatest danger. A knowledge of the relationship between health and happiness and the care of the body is highly important.

What are the essential daily health habits? What are the essential facts in the care of the digestive apparatus.

those answers. Every one of these subjects can be presented to the child in terms which he can understand and in ways which will interest him.

These subjects may well be preceded in the classroom or on the screen by a discussion of the human mechanism. Any child is interested in the story of the modern steamboat, with its boiler, fire-box and engine for transforming energy, its skeleton framework which gives form to the ship, its system of communication reaching into every compartment, its motor parts, and its

water-proof covering of paint. The child is interested to learn that the boat takes on fuel, lubricating material and material for repairs. It is pleasant to think of the ship, with its proud and graceful form, always kept fit and trim and equal to the roughest weather.

The child is equally interested in the much more wonderful human mechanism with its parallel and surpassing accomplishments. The child at grammar school age is ready to study the parts of the human body with real interest in the mechanism and without any undesirable reaction. As he studies the different parts he learns of their care. With the body, as with the ship, the child does not ask what is its physics, its chemistry, or its precise architecture. He asks rather: "What does that part do? What is this good for? How do you keep it going?" He is ready for hygiene long before he is ready for physiology.

#### PREVENTIVE HYGIENE

The second phase of the subject—preventive hygiene—should give the child a fundamental conception of the nature and habitat of micro-organisms and the way in which the infectious diseases are avoided; it should teach the child what the organized forces of government can do for health preservation.

We hear some complaint that children are frightened by the teaching of these facts; but the writer has seen this subject taught without any of these undesirable reactions. Ought we not

to ask ourselves always, when we find it difficult to present the facts of nature, whether it is the facts or the methods that are at fault? Perhaps we have been talking too much about germs. When we find a child or an



WALTER PLANTS ONE OF THE ROUND "GARDENS" BY RUBBING HIS FINGERS IN THE DUST ON THE TABLE AND PLACING THEM ON THE STERILE "SOIL"

adult who believes that all bacteria are germs, we must conclude that the individual has been studying pathology and not bacteriology.

It is not the normal method of approach to talk only of disease-producing organisms. No one would think of substituting criminology for sociology. To cite a parallel example, suppose that whenever the city child were told of the fields and woods he heard only about the poison ivy, dogwood, snakeberries and poison mushrooms. Do you suppose he would have a wholesome desire to go to the country? And yet these poison plants do exist among the higher plants and in as great a proportion as do the disease germs among microscopic plants. Ought not the child to know, not only that most bacteria are harmless, but that the bacteria which cause decay and break down



DOROTHY LEARNS THAT THE MICROSCOPE IS A WONDERFUL INSTRUMENT

organic substances are just as essential to the continuation of life on the globe as are the green plants which build up new substances? We teach the child to be interested in the maple tree which makes sugar. Why not also interest him in the bacillus which makes vinegar?

#### THE LOGICAL APPROACH

We teach the nature of wild plants and flowers and how they grow; incidentally we teach people to avoid the poisonous plants. A very similar approach can be made in the teaching of preventive hygiene. If a child learns the real nature of bacteria and their growth, he will very naturally accept the facts concerning the relatively few harmful ones.

That is the point of view which was taken in preparing the film from which the illustrations for this article have been drawn—a film entitled “Getting Acquainted with Bacteria—the Smallest Plants in the World.”

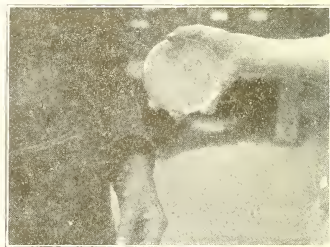
In this film only the harmless or useful bacteria are considered. The children who were photographed in the picture were thoroughly interested in the strange plants and in the “gardens” in which they were grown; in “making the soil like a gelatin pudding,” and in sterilizing it to “kill any weeds” which

might be present. Especially were they interested in the microscope which enabled them to see things not visible to the naked eye. They clearly appreciated the way in which the microscope “because it had one eye very close to the plants,” made it possible to see the separate plants just as one sees the separate plants in entering a garden of which only the rows were visible at a distance.

They learned that these harmless little plants grow in dirt and in water. From that point it will be an easy step for them to learn that dangerous plants might be mingled with useful bacteria under certain conditions, just as poison ivy might get into a field of grass. With this fundamental conception the child is ready to move on to a consideration of the personal and public problems of preventive hygiene and preventive sanitation.

#### SOME OF THE PROBLEMS

There are problems which confront health motion picture production for grammar school children, but these are not insurmountable. Perhaps the first difficulty is due to the fact that health teaching is not yet standardized in the way that the teaching of geography, history and civics is standardized. To



IN A FEW DAYS THE HARMLESS PLANTS HAVE GROWN INTO MASSES WHICH CAN BE SEEN WITH THE NAKED EYE



be sure, a few states have legislated to secure a definite number of minutes of health teaching each week, and the subject is rapidly taking form throughout the country; but at present there is no well-defined course to be followed.

Again, if they are to be most useful, health films must do more than present facts; they must stimulate action and correct wrong habits of living and thinking. This is a difficult task. Fortunately, however, the stimulus does not end with the picture, for in the grammar school program there is to follow the strong and effective personal contact of our excellent body of grade teachers. Here as elsewhere the picture is a teaching aid—*not* a substitute.

In making pictures concerning the care of the body, there is a difficulty in presenting the old facts in an interesting and compelling way. The child must not be left with a "You must keep clean." He must be shown *why* cleanliness is necessary; a desire for cleanliness must be established.

In presenting the facts of disease prevention the problem is quite different. The subject is interesting because it is new, but care must be taken not to take the mind of the child from the cheerful and positive thought of



WHAT THE MICROSCOPE REVEALED

health and center it upon the disturbing and negative thought of disease. But successful pictures in both phases of the subject can be produced by sufficient care and preliminary experimentation.

#### A RICH FIELD FOR VISUAL EDUCATION

It is the firm belief of the writer that visual education offers an unprecedented opportunity for teaching health. The school curriculum is already full, and yet the people of the country demand that the essentials of health education shall be taught. The motion picture, with its time-saving and telling manner of presenting health information, will go far toward establishing for us the brief, effective and standardized instruction which the welfare of the country and the health of the people demand.

[EDITOR'S NOTE: The author of this article writes that he would be glad to hear from any who are interested in the subject of visual health education, and that the results of his own experiments in this new field of teaching are freely available to readers of this journal.]



# BASIC MATERIAL IN EDUCATION

PHILANDER P. CLAXTON

United States Commissioner of Education

MANY of the most important reforms in education have been based on the principle of getting away from mere descriptions and words about things to the *things* themselves as a basis for ideas, for reasoning, and for an understanding of principles. But following every such reform there has always been a drift back to words; to spoken or written descriptions, reasonings and statements to be memorized by the pupils. It is so easy for teachers and pupils to become passive; to sit and read, or talk, or listen! All the force of inertia tends to drag down to it.

There are several ways of making use of things as the basic material in education. The term "things" is used here to include also actions, qualities and relations.

## THE PERSONAL EXPERIENCE WAY

The first and most effective way is to go to the things themselves: to visit the hills and mountains, valleys and plains, fields and forests, seacoasts and waterfalls, mines and mills, stores and markets, waterways and railroads, sea-ports and railroad terminals: to associate with men, women and children, and observe and take part in their activities; to observe armies in camps, on the march and in battle.

This method is effective and to be used to the fullest extent possible, but it is costly in time and energy, and difficult and sometimes impossible to use in such an orderly way as to make it contribute to systematic instruction.

## MUSEUMS AND PICTURES

The next best way is to bring the things to the child in the schoolroom. Museums and all kinds of collections are arranged for this purpose. This method makes it possible to fit the observation into the processes of systematic instruction. From its very nature, however, it is narrowly limited. Only samples and fragments of most things can be brought into the museums and collections, even when these are on the largest possible scale. Many things cannot be used in this way at all. This is particularly true of activities, movements and processes.

From the days of Comenius and his *Orbis Pictus*, there has been an ever-increasing effort to bring into the schools pictures of things, either to illustrate texts and lectures or to be used as the basis of description, analysis and reasoning. For centuries such illustrations had to be confined to woodcuts and engravings. The invention of photography made possible a wider use of pictures. The stereoscope and projection lantern made photography far more effective and greatly enlarged its use.

## AND NOW THE MOTION PICTURE

But photography, even with the help of the stereoscope and lantern, could not re-present action. The re-presentation of action, movements and processes is the particular field of the moving picture, which thus supplements in a magnificent way all the other methods of presentation and re-presentation.

All these methods are included under the term "visual instruction." A right use of the term must include them all.

"EACH AND ALL"

Each method has its place, and none of them can take the place of the expression of ideas and thoughts in words and sentences, nor of the hard and necessary work of thinking—of analyzing, sifting, grouping, abstracting and expressing in words.

Man is a thinking and speaking animal. Mere gazing at objects and pictures—even at the most interesting moving pictures—like a cow gazing at a new gate, will not result in education, not even in knowledge. Knowledge and education are something more than mere sense impressions, and something very much more difficult to obtain. Passive gazing is not more valuable than passive listening and may be very much less valuable.

TO SUPPLEMENT, NOT TO SUPPLANT

Nor can moving films take the place of first-hand observation of the things themselves, or entirely replace wood-

cuts, engravings, paintings, and the use of the stereoscope and the projection lantern. For the presentation of many things—such as landscapes and objects that are best observed in position and motionless, requiring time for analysis—moving pictures are much less effective than still pictures.

Neither can the film take the place of language, particularly of the spoken word, which in reach and power, in fineness and variety, has possibilities far beyond those of any form of visual expression or presentation.

By calling attention thus briefly to some of the limitations in the use of the motion picture in the school, I would not discredit it for any of its legitimate work. Its value as a help in school work is far greater than we have yet imagined, but this use must be in its own legitimate field. The sooner and more clearly we recognize this the better it will be for us, and the more rapidly and surely will the legitimate use of the moving picture be extended.



THE COLONIAL HEARTH AND SOME THINGS THAT WENT WITH IT

## THE WORKING MUSEUM VISUALIZING HISTORY

EDWARD CARLTON PAGE

Northern Illinois State Normal School, De Kalb, Ill.

AMERICA'S entrance into the Great War drew one of the assistants of our Normal faculty into war service. Thus a recitation room was left without immediate use, and being adjacent to the corridors, nooks and corners used by the Museum of History, it was turned over to that museum for its purposes. It was divided into two portions, one of which became a Colonial Room. Into this room have been admitted, for the most part, only such articles as date back to 1800 and earlier.

### AN OLD TIME FIREPLACE

The feature of this room which first

focuses attention is the end with the fireplace. Since a building project with permanent quarters for the Museum is on the program for the near future, the present fireplace is only a make-believe; but a framework covered with canvas and painted to represent brick proves sufficiently realistic. When the permanent fireplace becomes possible, it will probably be a replica of the one in the kitchen of the old Whittier homestead, where "Snow-Bound" was written.

Before the fireplace stands a Dutch oven, and on the hearth, inside the fireplace, is a bake kettle on its three

legs. Near at hand, in the chimney-nook, is a great brass kettle, its grimy exterior telling of many a soft-soap-boiling, lard-trying, or apple-butter-making. A hearth brick from a New England house of 1677 bears the evidences of two centuries and a half of use. An ancient boot-jack is conveniently at hand. A foot-warmer reminds one there is no excuse for staying at home from meeting on the Sabbath, even though the meeting-house be unwarmed. Heavy home-made fire-tongs hang by the chimney-side on a crude hand-wrought nail with a monstrous head. The bellows hang on another old nail driven between the "bricks." Opposite stands a two-hundred-year old tree stump which was converted into a mortar for making samp. Its browned interior tells how it was hollowed out by burning with heaped-up coals, red-hot. The bottom is badly decayed because it stood on the ground under the overhanging eaves of a stable, and for perhaps fifty years was used as a hen's nest.

On the mantelpiece is the inevitable candlestick with accompanying snuffers and tray. This candlestick is of the sort that often did duty on butchering-day by serving as a scraper for removing the bristles from the hog. Here, too, is an old-time lantern of the Paul Revere type. The original purchaser of the small mirror upon the mantel could not have had the perfervid Americanism of a present-day senator, for it was "made in England." A large platter and a teapot of pewter give sufficient representation of this ware.

Suspended over the fireplace are ears of Indian corn braided up for drying, the red ears among them suggesting the osculatory privileges of a bygone day. The Museum possesses a flintlock

musket of the days of the old French wars, with powder-horn and shot-pouch, but they are not yet installed in their position of readiness over the fireplace. From a molding at the chimney-side hang a gourd dipper, wooden, copper and iron ladles; also a long-handled skimmer, cooking forks and spoons, all hand-made.

Since the fireplace is only temporary it is not yet outfitted with cranes, and-irons and the rest of the hearth tribe. In this connection we may also note the absence of a spinning-wheel from the fireside. We have a number of wheels, one of which belonged in the Custis family, but as our Colonial Room is limited in size, all spinning and weaving devices are at present housed in the Textile Room.

#### "KITCHEN THINGS"

At one side of the room, conveniently near the fireplace, is a kitchen table made of solid walnut (of the familiar drop-leaf type). This particular table is distinguished as having served as a desk at the first sessions of the County Commissioners' Court and the Circuit Court of the new County of De Kalb, Illinois, back in 1837. On the table is a variety of utensils familiar to the colonial housewife. There are the candle-molds and the mortar and pestle for grinding spices. A tin sirup pitcher has been wonderfully and fearfully decorated (somewhere along the generations of its existence) by some would-be artist. There are a couple of jugs, a fat one and a lean one; a potato masher, which reminds one of the time when even common folks could afford to eat potatoes and potatoes were "mashed" instead of "riced"; an old-time hand-made apple-parer which always attracts attention

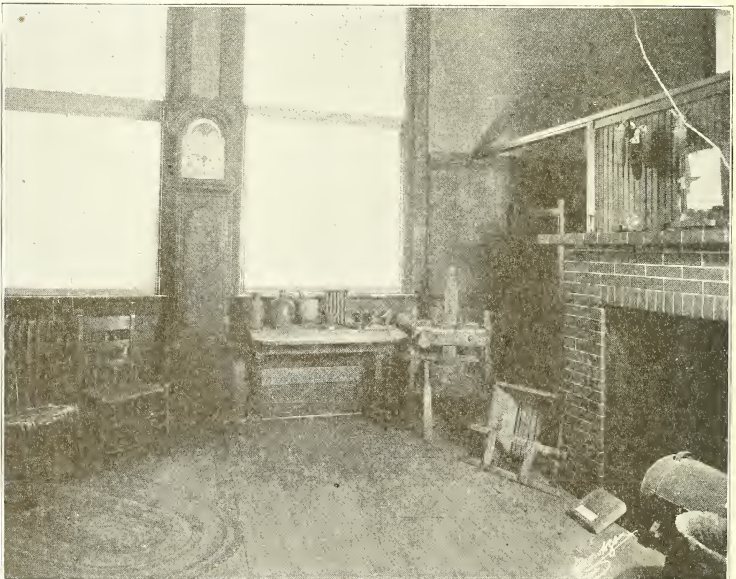
because of its evident efficiency, notwithstanding its crudeness. Here also should be a colonial rum bottle and a whiskey demijohn which, with its contents, once served as part payment in a slave trade; but for the present these articles are part of a special exhibit arranged in commemoration of the demise of Old John Barleycorn.

Near the table is a cheese-press which is unusually complete after having been unused and knocked about for a generation or two. Not only are the main parts intact, but also the hoop, the cheese-ladder, the cheese-basket, and even as ephemeral an article as the curd-knife. A tall wooden candlestick, with sockets for two candles, stands on the floor and is elevated or lowered by means of a screw device—doubtless the invention of some ingenious Yan-

kee cobbler who sought to work longer hours before the days of daylight saving.

#### A COLONIAL BED

Probably next in interest to the fireplace and the things associated therewith is the other end of the room, a reminder of the bedroom-living-room of colonial days. The four-poster bed is held together by ropes, which also take the place of the slats of more modern beds. The wooden bed-wrench and peg for tightening the ropes are fortunately preserved. The tick of the straw-bed is hand-spun and woven, as are also the linen pillow-slips. One of the quilts, notched at the corners to fit around the bed-posts, hangs down on all sides so as to form a sort of balance. Another quilt is of patchwork of the



A CORNER IN THE COLONIAL KITCHEN, COMPLETE WITHOUT MODERN CONTRIVANCES



"Wheel" pattern, and was made by a bride of 1826 as a part of her wedding outfit. The coverlet is only about two generations old, but it was hand-spun and woven in patterns of different colors. The old-time cricket, seen in the photograph, formerly served as a mounting-block to aid in getting into the mountainous bed. A trundle bed, to stow away under the big bed, is in the neighboring community and awaits our going after it.

The trunk at the foot of the bed is covered with deer-skin, with the hair left on, and is studded with brass-headed nails. In appearance it is almost a duplicate of the one that stands at the foot of Washington's bed at Mount Vernon. On an old, braided oval rug stands a rocking-cradle of the hooded type, about two hundred years old. There are two rush-seated chairs which were part of a set given as a wedding present in 1785, and a little straight-backed rocker which was once splint-bottomed, but since has been cushioned and covered with a patchwork of the log-cabin pattern. A fine old grandfather's clock stands between two windows, and an ancient mirror with a tarnished gilt frame hangs upon the wall beside a faded sampler.

Other things in our Museum will ultimately go into the Colonial Room, but enough has been told to serve the purpose of this article.

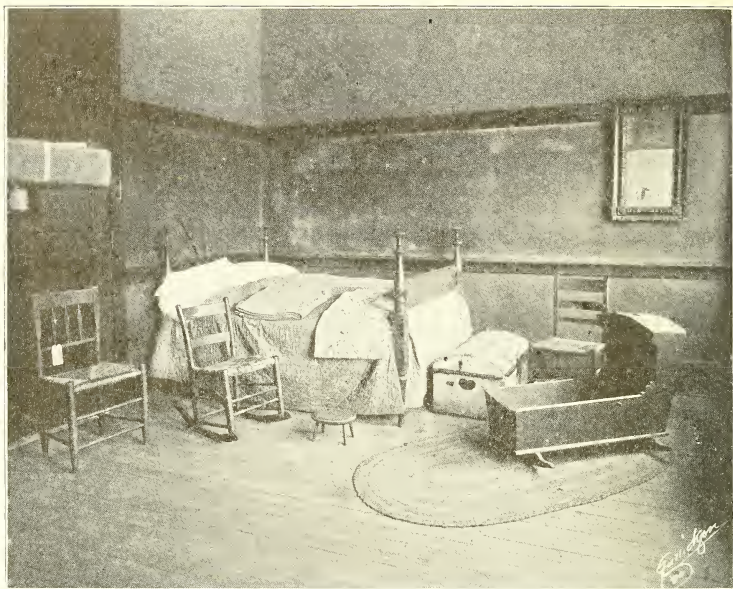
#### PRACTICAL CONSIDERATIONS

Now comes the individual who describes himself as a "practical person," saying, "Oh, all that may be very interesting, *you* may be able to secure and assemble such a collection, but it must be remembered that you have a vigorous institution and a great state back of

you. Most teachers of history have no such advantages."

The fact is that the institution and the state have not been back of us at all. Both have been interested and both have been willing, but we have deliberately sought to develop our Museum of History without cost. Furthermore, we have had no exceptional opportunities for acquiring material except in the case of a rather extensive Chinese collection which figures elsewhere in our Museum. Things similar to those we have described as in the Colonial Room, any teacher can obtain without money and without price. It is the absolute truth that what we have done anyone can do.

Again, our "practical" friend puts in: "Surely the institution has provided you rooms and cases." This statement is true only to a limited degree. When the Museum was started, eight years ago, we were given a small room about fifteen feet square and the privilege of using the sides of the corridors in the vicinity of the department of history. The school carpenter built wall-cases on two sides of the room. Considerably later a second room of the same size as the first was added and two more wall-cases were built. In addition we obtained tables and a number of counter-cases from interested friends, and the institution purchased some cases second-hand. It was not until two years ago that the vacated recitation room made possible the two special rooms referred to before in this article. We feel amply warranted in declaring that in almost any situation, when one has started the gathering of historical material and justified the collection by real use, the authorities or interested friends can always be de-



DETAILS OF THE COLONIAL BEDROOM

pended upon to provide housing space and means for caring for the collection.

It is not necessary to have a separate historical room in order to give expression to such an idea as the colonial museum. The sides of a corridor, or a corner in a large room, afford opportunity to bring into relationship objects that were naturally associated in the olden times. For six years we succeeded fairly well in creating a colonial atmosphere under just such limiting circumstances.

The "practical" individual still persists: "You cannot deny that, in rural and village communities, especially in the newer parts of the country, the amount of available historical material is so meager as to be negligible." Yet, even granting the paucity of material to be as stated, just a few articles would

be worth-while. Even one is better than none. The school that can afford only a single microscope considers itself much better equipped for the study of biology than the school with none; the school with only a half-dozen chemicals and a few articles of equipment has made a praiseworthy start toward a chemical laboratory. But, as a matter of fact, we know personally of numerous tiny communities in which live teachers have in a short time collected hundreds of articles that have proved of immense value in the teaching of history.

Then comes one who assumes to "take the joy out of life," saying: "Yes, yes: you are interested in a museum and you keep it going. But one will come after you who will not be interested.

*(Concluded on page 62)*

# VISUALIZING MYTHOLOGY

GRACE PARTRIDGE SMITH

University of Iowa, Iowa City, Iowa

BREATHES there a moving picture director with soul so dead who would not thrill to a new idea for the screen? Is there one who has not lamented loudly and miserably that the thirty-six dramatic situations and all the plots in all the books of all the countries in all the world are exhausted? It will not help that time and space are annihilated in the workshop of the motion picture; that in Screenland impossibilities become possible; that expense is a minor consideration. The idea alone is the thing.

The idea-hungry director has not far to look, however, for a gold mine—no farther than his own library—for there are possibilities unlimited in the stories of Greek mythology. Properly filmed, these myths would equal, if not surpass, any film dramas yet presented. Don't you think you would go to see "The Fall of Troy," "The Judgment of Paris," or "Demeter's Daughter"? There can be no doubt of the "interest" qualities of such stories, if filmed with dignity and faithfulness of detail—which bar out Achilles in "trunks," Aphrodite disporting wrist watch or ear puffs, or Odysseus with B. V. D.'s. It may be that such little inconsistencies are forgivable in "art," since they seem fated to occur even in the best-regulated movies, but we do not want them in our educational films.

## THE CHARM OF VISUALIZED MYTHS

Stories of the gods and heroes of ancient Greece are especially fascinating to children and, for that matter, to us all. How much more delightful,

however, for a child to "visualize" these classic legends than to pore over a book! If a plan to screen mythological tales were perfected, it is certain the theatres showing such pictures would attract the children; and there is an accredited advertising axiom to the effect that if you get the juniors the parents will come too.

There is no need, however, of our seeking any excuse to entertain ourselves with these fanciful creations of the imaginative Greek people. In the all too strict commercialism of this present day, we need the refining touch of their ideals of beauty; we need the simplicity and directness for which they stand. Part of the educational value to the child would be their influence in shaping his standard of art and heightening his aesthetic sense.

As a source of pure entertainment also, these tales cannot be surpassed. They have stood the test for three thousand years; they have entertained kings and commoners and have been embodied in the best of the world's best literature. Shall the screen disdain them?

## "DEMETER" MYTH AS A TYPE

A myth that at once suggests itself as effective material for screen production is the Demeter myth. This is one of the most appealing in the whole theogony, based as it is on certain elemental principles in Greek life. The story is dignified and full of incidents that stir the imagination. Besides, there is throughout opportunity in plenty for those magical "effects" and

transformations that prove so thrilling in filmed fairy tales. The theme, dealing with mother love, yearning, renunciation, fruitfulness, the joy of giving and the mystery of life, will enlist the full sympathy of all.

Hawthorne has given us a delightful, slightly modern recast of this story in the "Pomegranate Seeds" of his "Tanglewood Tales." Other versions are given in "Classic Myths Retold for Children" and in various Greek authors. The Homeric Hymn to Demeter is especially recommended.

The myth divides itself naturally into five parts—corresponding, shall we say, to a five-act drama. Analysis of the outline proposed will show that interest is suspended until the very close; that action "ascends" until the middle of the fourth act, when the crisis is reached and the "descending" action begins. The scenario writer might block out the act as follows:

- Act I. Rape of Persephone.
- Act II. Wanderings of Demeter.
- Act III. Council of Olympians.
- Act IV. Journey to Eleusis.
- Act V. Restoration of Persephone.

No fairy tale calls for anything in the way of backgrounds that could surpass the setting possible for the opening scene of this myth, in which the King of Hades spirits away the "long-ankled" daughter of Demeter. The Homeric Hymn tells us that this fair damsel was "sporting with the deep-bosomed daughters of Ocean, and gathering flowers on the lush mead—the



RAPE OF PERSEPHONE (PROSERPINA) BY HADES  
(PLUTO)  
From the painting by Schobelt.

rose, the crocus, the iris, the beautiful violet, and the hyacinth, the narcissus, too. The maiden in wonder stretched out her hands, the twain together, to seize the beauteous treasure." Then Hades rises, straight through the yawning chasm, and bears Persephone away in his chariot to the halls of his underworld palace.

The wanderings of Demeter to the haunts of mortals would give occasion for richly set scenes in famous cities of Greece. Against lovely pastoral and marine settings her frenzied search among tillers of the soil and among mariners and shore-dwellers would be staged. Not only Greece, but the whole earth, mourned with Demeter and human-interest features for these scenes of the drama suggest themselves in almost unlimited number.



Much could be made of the Olympian deities, even after the opening Council scene from which Demeter withdraws in anger. Demeter's journey to Eleusis and her treatment of the king's sick son provides a startling episode, particularly where the nurse cradles the royal infant in the fire on the hearth in order to make him "ageless and deathless."

In the meantime, Persephone is languishing on her throne in the underworld beside her lord Hades—Pluto, the Latins called him. Here the riches that are hidden in the earth suggest a scene of dazzling splendor. Cerebus, the faithful three-headed guardian of the palace, is sure to prove a favorite with the children.

The conditional restoration of Persephone to her mother's arms conclude the story.

#### RESEARCH AND STUDY INVOLVED

The filming of this lovely legend, as well as other stories of Greek mythology, would demand a close and discerning study of the works of Greek literature, notably Homer and Hesiod, whose pictures of the Olympians the Greeks accepted as final even though they were modified from time to time by later writers. The dwellers on Olympus were but the reflex of Greek character and thought—a part of their everyday life and experience.

The director would need to study each character with the thought of bringing out its background of motiva-

tion. Every one of these creatures of ancient fancy stood for some idea; sometimes an abstract idea, sometimes an explanation, in terms of mythology, of the wonders of life and nature. Behind Demeter's maturity of form, corn-colored hair, and sheaf of grain was the idea of mother-love and fruitfulness. Zeus was not revered alone for his majestic figure, crowned with "hyacinthine locks," nor for the fear his thunderbolts inspired, but for a deeper reason. He was thought of as the Pro-



RETURN OF PERSEPHONE. HERMES BRINGS HER  
BACK TO HER MOTHER, DEMETER  
From the painting by Lord Leighton.

tector, not only of vegetation but of the state, and as the essential genius of the family.

With the study of character there must be a study of symbols. This was  
(Concluded on page 58.)



## MISCELLANEOUS NOTES

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**A**MONG the great achievements of the cinema must be reckoned the breaking down of the barriers of prejudice, condemnation and indifference that have hitherto prevented authors of repute from contributing to the screen. When such men as Sir Gilbert Parker, Sir James Barrie and Arnold Bennett not only advocate the use of motion pictures but also seriously study their technique for the purpose of writing scenarios, it may be seen plainly that times are changing and that the cinema is entering into its literary heritage.

Sir Gilbert Parker, writing ardently in "Vanity Fair" in support of the movies, calls the film "the irresistible thing" because it has come to stay. The rapid growth of the film industry and the grip that it has obtained upon the public is the marvel of the age. The eminent British author feels that since the moving picture is a permanent and vital factor of vast significance in the lives of countless numbers, the thing to do is not merely to tolerate it but to elevate it to a high plane of art. A good drama may influence thousands; a good photoplay reaches millions and is circulated in villages and towns where there are no theaters and "the play is" never "the thing."

As he effectively says: "Every art has its degrading tendencies or commonplace manifestations and all of them are many centuries older than the screen which has just begun." No one condemns music because of cheap ragtime. Why then should the motion picture as an institution be condemned because some directors have not sensed

the possibilities of the scenes being molded beneath their hands. "If the same class of intellect gives to the screen, in the way of critical attention, what it gives to the best book or play the screen will rise to great heights."

Sir Parker lines himself up with progressive educators in feeling that the cinema is the most effective medium yet found for transmitting information on geography, modern history, machinery, science, manners, etc. He would put a film theater in every school of every village in the English-Speaking world, for what is learned by the eye is never forgotten.

A rather striking argument that he makes for the moving picture and one that would not greatly appeal to an American laboring under the eighteenth amendment, is that the cinema is the greatest agent for temperance in the world. The average English working man goes to the public house for entertainment and to avoid the congestion of his small crowded home. The social improvement of many English villages has proved the cinema to be an adequate substitute for the saloon.

The value of the motion picture in industry is too universally assured to admit of debate. Sir Gilbert emphasizes, however, the fact that the film is helping to solve the problem between the two great classes of society, the intellectual, inventing, originating class and the intelligent, producing class.

It is entirely natural for the author of such historical novels as "Seats of the Mighty" and "The Right of Way" to feel that the refusal of the American director to film historical drama is

based upon a wrong interpretation of the attitude of the public toward costume plays. The past is infinitely rich in material for picturesque, romantic drama and the time is at hand when that fact will be realized. It may be that the war will help in the realization that the present slips into the past even with the thought and that the future will be nothing without understanding of what has gone before.

In concluding, Sir Parker says: "The film is international. It is more widespread and effective than music, sculpture and painting, for its masterpieces can be seen in every corner of the world."

★ ★ ★

UNTIL just recently a moving-picture scenario has been considered much in the light of a diagram, necessary in charting out and directing the course of a photo-drama but entirely inconsequential in itself. The extraordinary development of the motion picture is responsible, however, for a changing attitude. It is now recognized that there is a technique of writing, peculiar to the motion picture scenario, a technique that has to be studied to be mastered. Further improvement of the form of the scenario now brings us to the point where scenarios will be published in literary form even as are plays and novels. Thus the inundation of the literary field by the cinema touches a still higher mark.

Europe has furnished the first "literary scenario." Jules Romains, creator of the Unanimist school of literature, has just published a written film of romantic adventure called "Donogoo-Tonka." This production is a light satire, however, and has not the

earnestness of "Die Pest" of Walter Hasenclever, a young German dramatist, who believes wholeheartedly that the film is a most powerful agent in bringing the people of various nations together. The differences between these two "art-movies" are marked. In "Donogoo-Tonka" the text and pantomime are intermingled; in "Die Pest" all the details of presentation are left to the director. There is never a bit of dialogue or spoken remark; the episodes are indicated in a single line; the scenario is a rhythmic sketch.

Those familiar with the haunting, mysterious beauty of the "Masque of the Red Death" will be interested in knowing that "Die Pest" strongly resembles this tale of Poe's. "It is a ghastly reverie" on the end of the world, but its seriousness and intensity prevent it from having the almost unearthly delicacy that characterizes Poe's works. Its chief significance lies in the fact that it is a beginning, an attempt to create a new field for literary effort.

The story as outlined in *Current Opinion* is simple.

(We quote literally.) "In the year 2000 the world has become like a paradise. Universal peace and plenty. But the world must perish. First act: The black pest, spread by rats, is discovered aboard a transatlantic liner, attacking the crew and the passengers of every class. Second act: The pest, spread by a dancer whose gowns have been infected by the rats, spreads now among the audience in a theater in a seaport, and thence into the great capital where the dancing girl has sought refuge. The country is in a state of siege. Great alarm on the Exchange. The evil spreads into the low countries and depopulates the villages. One child alone

escapes this horrible death. Third act: The pest continues to spread. A scientist at last discovers a serum. A banker buys from him the rights of exploitation. Revealed to himself by the mysteriously spared child, a student makes himself the apostle of the war against the pest. Fourth act: The epidemic continues to spread. Everything is stricken. The inventor and his backer continue to work. But an accident happens at the very moment the scientist is about to apply his remedy to the stricken. He infects himself and falls. Insane panic. Fifth act: Deserted villages, the last living beings have gone mad. The banker and the dancer escape into a castle where Death awaits them and their guests. The castle is burnt down, and the film ends with an immense dance of the dead."

★ ★ ★

THE following abstract is taken from the *New York Times* of October 25, 1920:

"The use of motion pictures in schools as an aid to instruction is steadily increasing in popularity throughout the United States, according to an investigation recently made by the Bureau of Education. Out of 5,500 elementary schools and 4,500 institutions of high grade, covered by the investigators, it was found that 6,400 schools in the country are equipped with machines for projecting motion pictures, and of these 3,720 are elementary schools and 2,600 are high schools, normal schools, colleges, etc.

"Of the 10,000 schools included in the investigation, 1,000 have standard size projection machines, 484 have made or will make arrangements to install machines immediately, and 2,025 schools have arranged to show the pupils edu-

cational films outside the school buildings. Of the latter group, 62 per cent use theaters, 30 per cent use city, community or club halls, and 8 per cent use churches. Of the remaining 6,491 schools, which have no projection machines, 67 per cent have electricity and have halls with an average seating capacity of more than 300 each, suitable for the exhibition of films. Twenty-five per cent of the schools do not have electricity in or near the school buildings, although facilities for exhibiting motion pictures could be arranged. Eight per cent of the schools could obtain electricity near the school buildings.

"A summary of the information received from the 1,000 schools which have installed projection machines as to the sources of available funds for securing the films, shows that money is received as follows: Twenty-five per cent is raised by subscriptions among the pupils, 20 per cent is raised by charging admission to community gatherings, 10 per cent is appropriated by the state, the county, the city, or the School Board, 18 per cent is derived from the various private school funds, 17 per cent is received from miscellaneous associations, school improvement associations, entertainments, etc., and 7 per cent is received from personal contributions.

"Commercial film companies and exchanges furnish films to 55 per cent of the schools which show pictures. Thirty-three per cent receive films from Government departments and altruistic organizations and 9 per cent from industrial manufacturing concerns. A large percentage of the schools receive films from more than one source."

From "the Inner Movie," *Current Opinion*:

**B**E respectful to your imagination, for it is one of the powerful forces that mould your character and control your destiny. The images your imagination creates, the visions of the future that dwell with you continually must of necessity influence you, and influences are the stonemasons of character.

Your imagination produces vivid, romantic dramas—with you as featured player—that show the gratification of your desires, wise or otherwise. If you screen for yourself intimate pictures of failures and disillusion, very likely you will be the one and have the other. If your internal moving pictures, however, register a successful, optimistic person in action, ten to one that is what you will be.

Censor your own productions; cut out those reels which lower your self-esteem; give extra footage to scenes of cheerfulness and prosperity. Learn to do your own booking; don't let wrong habits and degenerate inclination dictate to you the dramas that are to be run by that licensed union operator, imagination.

\* \* \*

**I**NTERESTING evidence on actual workings of visual instruction in France appears in an article by Monsieur Boysy-von-Dorsenne in the Paris Magazine for June 10, 1920. It is entitled "Le Cinéma dans les Ecoles," with the sub-title, "An educator of which the 'Before-war period' did not dream and which the 'After-war period' does not sufficiently encourage."

I am a frequent visitor, says the writer, at the film lessons conducted by M. Collette at the school for boys in the Rue Etienne-Marcel. I am giving a modern touch to my education and, although I am far less quick in observation than my young comrades of 8 to 12 years, I am enriching my mind with "things seen," and thereby filling the gaps which have always existed in my real knowledge.

When the professor had given a few explanations about rice culture, with black-

board drawings, the cinema "spoke," if I may use the term.

On the screen a Jap, knee-deep in a rice field, was cutting rice, a handful at a time, and laying it on a rack beside him. The picture lasted three or four minutes, sometimes moving slowly, sometimes remaining entirely still. Then the lights were turned on and M. Collette put the customary question:

"What have you seen in this picture?"

Instantly a score of hands were raised. The answers came one at a time, as the teacher indicated.

"He cuts the rice with a sickle—with the very end of the sickle—he is buried to the knees—he cuts the rice without taking a step for it would be too tiresome to lift his feet at each stroke—he lifts up the heads of the grain with the back of the sickle—this is so the grains will not be dragged in the mud—the rack is an overturned basket—he binds the sheaf with a—a—a thing."

"A thing? What thing?"

"A thing of twisted straw, Monsieur."

"I know, Monsieur, it's a 'band,'" volunteers a young sage.

Then followed the processes in the preparation of the rice for market, husking and winnowing. The picture showing a Jap using a fan to separate the grain from the chaff made a pronounced "hit" with the children. "That raises a lot of wind," said one pupil, "all the leaves are waving near him; further off they are motionless."

I had not noticed that point myself and said so to M. Collette. He replied, "Oh, they notice about everything. Last Monday, when I was showing them a lantern slide,—a still picture of the Valentré bridge at Cahors,—I asked them in which direction the river was flowing. Notice, now, that the picture was not moving and consequently they could not see the current."

"It flows from left to right," said one, "because the pier of the bridge is sharp-

(Continued on page 57)

# WHAT SCHOOL SUPERINTENDENTS THINK

VISUAL instruction has secured a firm footing in the program of the progressive school today.

*John H. Phillips  
Birmingham, Alabama*

THE possibilities seem to be unlimited for work in this field.

*Lee Byrne  
Fort Smith, Arkansas*

WHAT new improved tools and machinery are to industry, is visual instruction to education. I believe in it.

*Ira C. Landis  
Riverside, California.*

VISUAL instruction has a large place in education and I believe in the near future it will become an established method.

*(Mrs.) Elizabeth Hinton  
Grand Junction Mineral, Colorado*

VISUAL Education has a most vital place in our modern educational system. It creates added interest and fixes knowledge.

*E. C. Fisher  
Rock Island, Illinois*

THERE is no educator today who does not see the great advantage of visual education. It affords one of the quickest and clearest mediums of instruction. It has come to stay.

*S. O. Weldey  
Hanford, California*

THE moving picture will be an indispensable feature of the school work of the future. Regular courses will be made out for work in Geography and History. These courses will parallel the

work of the text. When people realize that as much can be learned from a picture in an hour as from the printed page in a month, they will not be slow to utilize the picture.

*G. G. Bond  
Athens, Georgia*

THERE is no doubt in my mind that visual instruction which supplements the other forms of instruction will prove a most valuable aid in the work of the schools.

*G. P. Randle  
Danville, Illinois*

I IN my opinion visual instruction by the methods suggested in your letter has a very important place in the public school work of today and no school organization is thoroughly equipped should it be short along this particular line.

*E. J. Bodwell  
Ames, Iowa*

I AM convinced that visual instruction by means of the materials you mention is of vital importance in the education of our young people. Boys and girls in our schools are deluged with words, words, words, mostly meaningless to them.

*Frank Smart  
Davenport, Iowa*

VISUAL Education will afford a new channel of progress in education. Nature's original way is to become the new pedagogical method. The natural method of presenting subject matter to the mind of the learner is through visual means. The open-minded teacher certainly welcomes everything new in visual education.

*M. E. Pearson  
Kansas City, Kansas*



"SEEING is believing." Sight memory is lasting. Visualized subjects are more accurately acquired and more readily retained. Every schoolroom should be equipped with apparatus for visualizing every possible subject.

*T. C. Cherry*  
*Bowling Green, Kentucky*

AFTER considerable investigation, experience and observation, this is to endorse without qualification the attempt to teach all the school children very largely by the use of vision, by the consistent and systematic use of the stereograph, the moving picture, and other means whereby pupils may receive knowledge through the sense of sight.

*W. J. Avery*  
*Alexandria, Louisiana*

VISUAL Education will become a more and more important factor in education. The modern school plant will be equipped for visual instruction. Apparatus and materials necessary for visual instruction will be supplied to every well equipped school.

*Harvey Cruver*  
*Worcester, Massachusetts*

THERE is no doubt of the great value of visual instruction in the education of pupils in the public schools. The great difficulty thus far has been that the material was not properly selected and organized in such a way as to correlate with other instruction given. When such is provided and properly organized, visual instruction in my judgment will take its place as one of the most efficient means for public education.

*Ira Cammack*  
*Kansas City, Missouri*

MUCH has been said in the past few years relative to changing the school curriculum to meet the changed conditions. I believe visual education is one change that will make it possible for us to meet the changed conditions. It will

cost money, but visual education will certainly prove to be a saving of time and money through greater efficiency.

*J. M. Bickley*  
*Clovis, New Mexico*

I HAVE no hesitation in saying that, in my opinion, visual instruction, wisely directed, so as to blend amusement and instruction in proper proportions, holds a very important and a very valuable place in the mental and moral training of youth, especially of those who are strongly eye-minded in their mental operations.

*James S. Cooley*  
*Mineola, New York*

THAT which enters through the eye "sticks." Visualize is to vividize.

*Smith Hagaman*  
*Vilas, North Carolina*

A LITTLE experimenting with stereoscopes, slides and films has demonstrated the tremendous advantages and possibilities in visual education. One of our Normal school teachers is specializing in training teachers in the use of such material.

Schools in general have made only a beginning in it and few fully realize its many advantages. Visual education makes for greater clearness, definiteness, certainty, and effectiveness of information. It has unlimited possibilities in the school room.

*Marie Gugle*  
*Columbus, Ohio*

I N my opinion the value of visual instruction can scarcely be over estimated. The best teachers have always been ready to help illustrate the point with a sketch or diagram at the blackboard. All such teachers rejoice to have placed at their service the pictures, slides etc., of an educational nature and the happiness of the children exceeds that of the teachers.

*J. A. Jackson*  
*Clarksburg, West Virginia*

# A DEPARTMENT OF BEGINNINGS

This department is intended as a clearing house through which the schools which have already made a beginning—however modest—toward visual instruction, may pass on their experience for the benefit of others.

If you have made a start in this direction, it is because you believe in visual methods. If you believe in visual methods, you will be glad to encourage others to take the forward step. Therefore, send us an account—a few lines or several paragraphs—of your efforts, your experiments, difficulties and successes.

“THERE should be projection apparatus in every school building, both for slides and motion pictures. In the Champaign public schools, an excellent motion picture equipment is installed in the high school auditorium seating a thousand persons and its cost of about \$700 has been paid and a reserve fund of \$260 accumulated in four years, without any cost to the district except for the electric current used. In one only of the nine elementary schools has a smaller machine been installed, this also without cost to the district, except the expense of cutting a wall and setting accordion doors between two rooms to provide a hall and projection distance.

“In addition to the geographical, scientific, historical, and literary information that can be given through the open eye by the use of such equipment, an auxiliary value is found in the opportunity for training of children in proper decorum in assembly, regard for the rights of others, etc.

“The use of stereoscopic views is another of the most valuable means of bringing clear information to the mind by the eye route. These views approach reality far more closely than any other form of picture. Of these, four buildings in Champaign possess full sets, these also having been acquired without expense to the public treasury.

“If any individual or parent-teachers’ association or other club can be found to invest in or guarantee the original cost of such equipment, good entertainments, giving more truly educational pictures than the commercial theaters and at nominal prices, can be made to pay the whole expense with no loss to anyone

and profit to the children and the community.”

W. W. EARNST,  
*Supt. of Schools,  
Champaign, Ill.*

“WE have been using motion pictures in our school for the past year and believe that the results are good. Our pictures come once a week, Wednesday afternoon and evening. They are shown in the auditorium of the high school at a cost which just covers expenses. We usually run a series of ten pictures and then skip a week or so before we begin a new series. We are making use of the Ford Educational Pictures in addition to the regular film. Just at present we are running a series of Edison pictures. Our chief difficulty has been to secure films which are satisfactory to young people. It has been our aim to put before the students pictures of a high class nature so that they will be able to distinguish the better pictures from the cheaper ones. The number of people, both children and adults, who view these pictures leads us to believe that the better class of pictures are more desirable than the poorer ones. We charge five cents admission to each performance and have on the average of about eight hundred who see the picture.

ERNEST J. REED,  
*Principal, Senior High School  
Adrian, Michigan*

“FOUR years ago, I became interested in the equipment of Underwood and Underwood called ‘The World Visualized for the Classroom,’ which is an organized body of illustrative material of school subjects arranged in a most convenient and prac-

tical way. The type plan is used, making it possible to illustrate a great variety of topics, and to develop in the child a direct connection with the actualities of the earth and the multitude of activities of man as related to it.

"We placed the entire equipment of stereoscopes and stereographs in the school. The Teacher's Manual, edited by Professor F. M. McMurry of Teachers' College, was a most helpful instrument in the preparation of single lessons and of series of lessons planned according to the Herbartian method, both in type and in project form. The equipment is of untold value and is in constant use. The great interest in the stereographs continues unabated, because they present the facts so clearly and impressively through individual and intensive study of the picture. \* \* \*

"I am enclosing you sample project lessons which are for use with the 'World Visualized' equipment, and which have been employed quite successfully by the teachers of the grades. This is the kind of lesson plan used in most classrooms here in the school, and I am sure that with the added value of the motion picture results will be obtained that will be of immeasurable good.

"I thought you might be interested in them as showing that we mean to take advantage of all illustrative material."

#### DOGS

(For Second Year Students)

##### Aim:

To teach the kindly friendliness of dogs, and their care by man.

##### Preparation and Presentation:

##### 1. Dogs owned by children:

Collie.  
Terrier.  
French Poodle.  
Greyhound.  
Bulldog.  
Spaniel.

##### 2. Duties:

Carrying mail.  
Tending sheep.  
Drawing loads.  
Watching houses.

##### 3. Appearance:

(a) Head.  
Size.  
Eyes.  
Ears.  
Nose.

##### (b) Body.

Size.

Coat.

a. Shaggy

b. Smooth.

##### (c) Feet.

##### 1. Number.

Number of toes on back feet.

Number of toes on front feet.

##### 2. Method of walking.

##### Stereographs:

Pet dog of an old soldier.

A little girl and her faithful dog.

A dog of the Far North.

Esquimaux sledge dogs.

After a hard run with the pack.

The little dog in Norway.

A dog in Lapland.

A dog drawing milk cart in Holland.

Dutch dog team.

World-famed monastery and dogs at Great St. Bernard Pass.

##### Application:

##### a. How we should treat dogs:

Kindly.

Gently.

##### b. Result of good treatment:

Watch dogs.

Helpers.

Friends.

#### A TRIP BY WATER AND LAND

(For Fourth Year Students)

##### Aim:

A review showing—

*Great Markets*—people, natural resources, occupations, transportation by water in taking a trip from Philadelphia to Minneapolis.

##### Preparation:

Map of United States, showing—

Pennsylvania, Philadelphia, New York, Mississippi Valley, Mississippi River, New Orleans, St. Louis, St. Paul, Minneapolis.

Clothing needed for climatic changes, as shown in stereographs on Philadelphia, Blossoms, Florida, Palm Beach.

##### Presentation:

##### 1. Trip to New Orleans—

(a) By rail from Philadelphia to New York, then

Stereographs:

Ferries.

Steamship.

Statue.

Harbor.

(b) To sea:

Looking back at New York.

Bridge.

Warcraft.

(Concluded on page 70)

# THE FILM FIELD

SOME months ago, in response to numerous inquiries from schools having projectors which stood idle much of the time for lack of usable material, VISUAL EDUCATION undertook to supply information which would enable such schools to get satisfactory programs as needed. This information has been found valuable by many schools, and the department will, therefore, be continued.

The number of "educational films" produced by the professional motion-picture companies is increasing, and the quality is steadily improving. We shall list fifty to one hundred each month. Any exchange or producer listed in this department will gladly send full information on their service in general or on any particular film.

*In general, films should be viewed by qualified judges before shown to school children.*

## HOW TO USE THESE LISTS

SELECT TITLES WHICH INTEREST YOU FROM THE LIST OF FILMS.

NOTE THE BRACKETED NAME OR NAMES FOLLOWING THE TITLE.

The names printed in *Italics* are Exchanges; address of the branch nearest you will be found in the Reference List of Commercial Film Exchanges (beginning on page 41).

The names printed in Roman are Producers; address will be found under Reference List of Producers (page 56).

ALWAYS WRITE TO THE EXCHANGE WHEN GIVEN—OTHERWISE TO THE PRODUCER FOR FULL INFORMATION, MENTIONING VISUAL EDUCATION.

## LIST OF FILMS

(In offering these selections, VISUAL EDUCATION in no way guarantees the value or suitability of the films. This can be done only when we have personally viewed the picture. The list represents merely the most careful choice possible to make from data given out by the producing companies. Only the films reviewed by our staff under the department "Films Viewed and Reviewed" should be considered as having VISUAL EDUCATION's recommendation, qualified or unqualified, as the case may be.)

All entries are 1 reel (1,000 ft.) in length unless otherwise specified.

### TRAVELOGUES AND SCENICS

THE PASIG RIVER. (Burton Holmes) (*Famous Players-Lasky*) What the Thames is to London, the Pasig River is to Manila, a stream of beautiful shores for recreation and commercial enterprise.

VISITING THE SULTAN OF SULU. (Burton Holmes) (*Famous Players-Lasky*) That the Sultan of Sulu is real and not merely a comic-opera figure is proved beyond a doubt in this very unusual and interesting reel.

THE REAL STREETS OF CAIRO. (Burton Holmes) (*Famous Players-Lasky*) The real streets of Cairo are ways thronged with merchants and camels and devotees and veiled women and everything else that a motion picture director is always certain to

place in his oriental scenes for atmosphere. An interesting picture!

PARIS FROM THE SKY. (*Educ. Films Corp.*) Eiffel Tower, the Place Vendome, the Cathedral of Notre Dame, are among the places glimpsed from the clouds. The reel is split, the last part portraying many kinds of birds.

TOURING THE MISSIONS OF CALIFORNIA. (*Educ. Films Corp.*) One-half reel. Showing the Catholic missions of the Golden State lying from north to south along the El Camino Real of historical significance.

OUR EGYPT OF THE SOUTHWEST. (*Educ. Films Corp.*) A picture made by Newman, showing how the Hopi, Taos and Navajo Indians fill the days in the process of what they call living.

**SEVEN LEAGUE BOOTS.** (Chester Outing) (*Educ. Films Corp.*) Winter sports in Switzerland furnish the material for this reel. Although the views presented have been frequently photographed, their beauty and interest are sufficient to make them always welcome to picture audiences.

**IN AND OUT OF KONGO SAN.** (Chester Outing) (*Educ. Films Corp.*) A trip to a strange and picturesque Buddhist monastery in Korea.

**PILGRIMAGE THROUGH THE CLOUDS.** (Chester Outing) (*Educ. Films Corp.*) Mount Fujiyama, the sacred mountain of Japan, is the end of this pilgrimage, which takes you through many places, not at all like Main Street in your own home town.

**FACING DEATH ON THE BLUMLSALP.** (Burlingham Travel Picture) (Wm. L. Sherry Service) The Blumlsalp is one of the famous ice climbs in the Bernese Oberland, Switzerland. The photographer of this picture shows you his spectacular, precipitous ascent to the summit. That he had a miraculous escape from death during the climb does not decrease the thrill for the spectator.

**THE PILATUS RAILWAY.** (Burlingham Travel Picture) (Wm. L. Sherry Service) The trip on this 7,000 foot cog railway is most sensational, with its changing panorama of the glorious Bernese Alps.

**NIAGARA (Prizma) (Select)** The awe and wonder inspired by this vast mass of falling water will never lessen, although many such well done pictures make us increasingly familiar with its aspect.

**MAY DAYS.** (Prizma) (*Select*) Scenes that the title suggests with views of lovers and love-making that also come with the spring.

**A TREK INTO SWAZILAND.** (Prizma) (*Select*) This trek carries you far from things civilization considers important, into the heart of South Africa and shows you how the uncivilized live.

**THE ROOF OF AMERICA.** (Prizma) (*Republic*) A journey to the Continental Divide in Northern Montana, with glimpses of glaciers, mountain lakes and picturesque trails. There are also brief views of the Black-foot Braves.

**THE CLOUD.** (Post Nature Scenic) (*Famous Players-Lasky*) A remarkably beautiful reel containing many views of marvelous clouds, quiet waters and fair landscapes. A picture of superb photography.

**AS FANCY PAINTS.** (Post Nature Scenic) (*Famous Players-Lasky*) Another one of the scenes that are setting a new standard for photography and selection of content.

**CELEBES.** (Post Travel Picture) (*Pathe*) Among the sights unfolded in the thousand feet of this picture are the Customs, the hoisting of an automobile and horse on to a ship, a funeral procession, an open air barber shop, together with other things upon which a Malasian is accustomed to gaze.

**IN HIGHER SPHERES.** (Ford Weekly) (*Goldwyn*) Physically, not metaphysically, the title means, for you are taken by this reel high up into the mountains where the scenery is gorgeous, but the temperature remarkably low.

**NASSAU.** (Ford Weekly) (*Goldwyn*) A picture that gives a clear idea, not only of the important places in this quaint city, but also of the daily life and customs of its inhabitants.

**THE RUINS OF DAMASCUS.** (Atlas Film Corp.) Excellent views of this city of great antiquity.

**A GLIMPSE OF TRIPOLI.** (New Era) This fascinating city of North Africa cannot fail to furnish interesting scenes; there are also views of Ajaccio, the birthplace of Napoleon Bonaparte.

**COLORADO.** (Beseler) Two reels. Nowhere can there be more magnificent scenes for the photographer's art than in this great

western state and as many as possible of these wonderful places are crowded into these two reels.

**ST. AUGUSTINE.** (Beseler) The oldest city on the American continent, a city of great historical interest with its old Spanish architecture.

## INDUSTRIAL FILMS

**GRAZING INDUSTRY IN THE NATIONAL FORESTS.** (U. S. Dept. of Agric.) Cattle and sheep grazing in the National Forests of the West.

**CEMENT AND CONCRETE TESTS.** (U. S. Dept. of Agric.) Showing how cement is tested in briquettes and also how stone slabs are tested for bridge building.

**WHEAT, TRANSPORTATION AND STORAGE.** (U. S. Dept. of Agric.) The moving of the crop from the northwest plains to Duluth, from thence by freighters through the Great Lakes to Buffalo and then to Baltimore for over seas shipment.

**HOME GARDENING.** (U. S. Dept. of Agric.) Two reels. These reels were formerly entitled "Feeding America from Its Own Back Yard" and present the proper methods of caring for city and suburban vegetable gardens.

**HOW IRON ORE DEPOSITS ARE DISCOVERED.** (U. S. Steel Corp.) Three reels. This picture, besides showing how iron ore deposits are located, gives much valuable information on how the ore is mined and transported.

**ORE DOCKS AT CONNEAUT HARBOR.** No. 4. (U. S. Steel Corp.) Showing in detail mechanical unloaders and the methods of handling the ore both by steamship and by rail.

**COKE OVEN OPERATIONS.** No. 5. (U. S. Steel Corp.) The manufacture of seamless steel tubing and cylinders.

**TRIPLEX METHOD OF MANUFACTURING STEEL.** Nos. 14 and 15. (U. S. Steel Corp.) An industrial picture of great value.

**FOR THE FUTURE.** (Ford Weekly) (*Goldwyn*) Pictures of a Self-supporting Industrial School in Michigan showing the various occupations that are of profit and interest to its inmates. Printing, gardening, shoe-making and cabinet making are among these occupations.

**IN FOR A RAISE.** (Ford Weekly) (*Goldwyn*) There are two divisions of this film, the first part showing the mixing and canning of baking powder; the second part, the making, cutting and packing of macaroni.

**OUT OF WOODS.** (Ford Weekly) (*Goldwyn*) Pictures from a Canadian lumber camp, the cutting of the spruce, the preparing of the roads, transporting of the logs, etc.

**MEETING THE WORLD'S DEMAND FOR SHIPPING PACKAGES.** (*Famous Players-Lasky*) Felling trees, sawing logs, making barrel heads, baling the heads, making staves, softening the bolts, etc. This reel ends with a cartoon.

**FROM COCOON TO KIMONO.** (Burton Holmes) (*Famous Players-Lasky*) All the steps in the silk industry artistically shown by that king of voyageurs, Burton Holmes.

**THE WOOD WORKERS OF ST. CLOUD.** (*Educ. Films Corp.*) One-half reel. This film illustrates the old fashioned methods used in St. Cloud in making such things as the rail for the back of a chair and a bowl fashioned from a block of wood. The fact is also brought out that the work is entirely original, for stencils are never used in the decorations and each pattern is different.

**THE PINK GRANITE INDUSTRY.** (Community Motion Picture Bureau) The quarrying of this unusual stone.

**TUNNELING UNDER THE EAST RIVER, NEW YORK.** (Community Motion Picture Bureau) This film shows the methods employed and the plant necessary to drive a tunnel under a body of water. The



methods employed are explained by diagrams and maps as well as by actual pictures.

**PEN POINTS OF PROGRESS.** (*Pathe*) The goose quill and the steel pen precede a detailed explanation of the making of fountain pens.

**MAKING RIFLES FOR THE GOVERNMENT.** (*Pathe*) An exposition of the many complicated processes necessary before a rifle is ready for use.

**TRUCKING THROUGH DIXIE.** (*Universal*) A truck test tour through the South.

**PRODUCTS OF FLORIDA'S LOWLAND.** (*Beseler*) Cypress logging and the celery industry furnish the material for this reel. All the steps in lumbering, the felling of the trees, sawing of the logs and the transportation are shown. There is likewise a full exposition of the raising of celery.

**SOME OF CALIFORNIA'S QUEER FARMS.** (*Beseler*) There are many kinds of farms in California, but two of the strangest are an alligator farm, with thousands of little reptiles, and an ostrich farm. The pictures of the latter include the feeding of the birds and the plucking of the plumage.

**COTTON INDUSTRY OF THE SOUTH.** (*Beseler*) Transported below the Mason-Dixon line, you see the cotton boll plucked from its home on the bush and carried through a series of experiences that leave it a finished product.

**COCOA AND CHOCOLATE FROM BEAN TO CUP.** (*Hershey Chocolate Co.*) It is a long way from the bean to the cup and there are many interesting processes in between, which this commercial film well shows.

**ABRASIVES.** (*The Carborundum Co.*) A picture made in the mills of the Carborundum Co. to show its methods of producing abrasives.

**THE VARNISH INDUSTRY** (*Murphy Varnish Co.*) Few people realize the steps that are required in the making of varnish, but this commercial film should be illuminating as to the process.

**MARSHAL FIELD & CO.** (*Marshall Field & Co.*) The gigantic wholesale and retail business known as "Field's" has no peer the world through. Such a picture showing various phases of its activities cannot fail to interest.

## BIOLOGY AND THE NATURAL SCIENCES

**LIFE OF THE SPIDER.** (*Educ. Films Corp.*) One of Ditmars' fascinating studies, and one so full of difficulties as to make the picture a remarkable photographic achievement.

**EVOLUTION.** (*Educ. Films Corp.*) A comparison of the animal life of centuries past with the animal life of today is a subject of unusual educational value. This film is from the Ditmars' Studio.

**THE HUMAN EYE.** (*Carter Cinema Co.*) A scientific reel showing the care necessary to preserve good eyesight, the structure of the eye and the disastrous results of abuse.

**CUBE AND SQUARE ROOT.** (*Carter Cinema Co.*) A comprehensive study of cube and square root taught by animated cartoons.

**THE PITCHER PLANT.** (*Beseler*) This plant, a native of Asia, Australia and North Borneo, is shown catching water and insects in its curious cup.

**THE CULTURE OF BULBOUS PLANTS.** (*Beseler*) A colored picture showing such beautiful flowers as the hyacinth, tulip, narcissus, martagon lily, water iris and dahlia.

**MUSHROOM CULTURE.** (*Beseler*) Preparation of the soil, planting of spawn, specimens, etc.

**CHUMMING WITH CHIPMUNKS.** (*Goldwyn*) How acquaintance with chipmunk is made—not such a difficult thing as might be imagined. This picture was photographed by Irene and Wm. L. Tinley of the National Association of Audubon Societies.

**BEAR TRAPPING.** (*Universal*) The photographic record of a bear hunt, thrilling enough, but which ends happily without tragedy for the bear.

**BIRD LIFE STUDY—PART 1.** (*Pathe*) Strange and unfamiliar birds parade before your eyes, among them the South African ostrich, largest of all birds, South American rheas, fly catcher, starling and tit.

**PREVENTING SPREAD OF THE GIPSY AND BROWN-TAIL MOTHS.** (*U. S. Dept. of Agric.*) Four reels. Showing these moths in all stages of development, their depredations on trees in New England, together with methods of fighting them. Inspection of timber to prevent the spread of the caterpillar; spraying of trees, etc.

**AN OCEAN RECLUSE.** (*New Era*) This is a split reel, the first half showing the weird hermit crab, which needs only half a house. The second half is an intimate and effective study of bees.

**CRYSTALS.** (*Atlas*) Their formation with specimens illustrating their great beauty.

**WONDERS OF MAGNETISM.** (*Atlas*) Demonstrating how different types of magnets work.

**THE MONARCH BUTTERFLY.** (*Society for Visual Education*) Herein is depicted the life process of butterflies in general and of this one in particular. It explains also the necessary adaptation to environment for preservation.

**MID-SUMMER WILD PLANTS OF THE CENTRAL STATES.** (*Society for Visual Education*) In this reel familiarity with the general shape of the plant is sought to develop and maintain interest in plant life and to assist in keeping observation acute and vigorous.

**MIDDLE ATLANTIC STATES.** (*Society for Visual Education*) 2 reels. These two reels, the first of the coastal plain and the second of the Appalachian Highlands, show the surface features, industries and manufactures.

**GREAT PLAINS.** (*Society for Visual Education*) This reel shows the surface features (treeless plains, bad lands, sand dunes), resources and occupations, cities.

## WEEKLIES, NEWS ITEMS AND REVIEWS

**PATHE REVIEW 76.** (*Pathe*) Pathecolor, views of the Rocky Mountains; Ditmars' film, rabbits, oyster fishing, dance.

**PATHE REVIEW 73.** (*Pathe*) Pathecolor, scenes from Portugal; Novagraph film, hat juggling slowed down eight times; Pathecolor, ghost flowers; standard size baskets, short measure baskets; travel-augh.

**PATHE REVIEW 65.** (*Pathe*) Pathecolor, scenes from Switzerland, Novagraph; slow motion photography, wrestling; use of gas masks in mines; Ditmars' study of two-humped camel; Chinese love dance.

**NEW SCREEN MAGAZINE 88.** (*Universal*) A boy, ten years old, catching forty-five pound fish; manufacture of postage stamps, up-to-date modes; our friends, the cat and dog.

**NEW SCREEN MAGAZINE 77.** (*Universal*) Ingenuity and skill of man who has lost both of his hands; exposure of tricks of spiritualists. scientific experiments with liquid air; the California poppy.

**CHAS. URBAN'S MOVIE CHATS 24.** (*Kineto Co. of Amer.*) Pictures from a lumber camp; artificial manufacture of ice. farm scenes with interesting views of domestic animals; a home for stray cats.

**CHAS. URBAN'S MOVIE CHATS 14.** (*Kineto Co. of Amer.*) Training of boy for the navy; exposition of the making of a can of condensed milk; strange instances of animal friendship.

**CHAS. URBAN'S MOVIE CHATS 12.**

(Kineto Co. of Amer.) American soldiers on a visit to the Chateau district of Chinon; demonstration of electrolysis of metals; views of a mischievous monkey.

**PATHE NEWS 87.** (*Pathe*) Train wreck, Radnor, Pa.; return of Prince of Wales to England; gun testing at Fort McArthur; school pageant in Sydney, Australia; grave of Roosevelt; Republican torch light parade, New York City.

**INTERNATIONAL NEWS, VOL. 2, No. 72.** (*Universal*) Mineola, L. I. army aviators arrive from Alaska. King of Spain reviews his private guard in Madrid, Spain;

raising of Italian superdreadnaught sunk in Taranto Harbor, 1916; views of Harding and Cox; fire in Milford, Mass., etc.

**INTERNATIONAL NEWS, Vol. 2, No. 70.** (*Universal*) New auto track opened at Fresno, Cal.; football game between Columbia and New York University; Pacific fleet in manoeuvres; alligator farm, St. Augustine, Fla.; U. S. largest airship; views of world's series, Cleveland.

**BRAY PICTOGRAPH 450.** (*Goldwyn*) The evolution of a flower; raising and feeding goats; blue ribbon winners; cut cartoon.

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Des Moines, Iowa. .... 100 Locust St.  
Detroit, Mich. .... 63 E. Elizabeth St.  
Indianapolis, Ind. .... 9 West Market St.  
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Minneapolis, Minn. .... 407 Loeb Arcade  
Milwaukee, Wis. .... 501 Toy Bldg.  
New Haven, Conn. .... 128 Meadow St.  
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New York City. .... 729 Seventh Av.  
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Philadelphia, Pa. .... 1309 Vine St.  
Pittsburgh, Pa. .... 119 Ninth St.  
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New Orleans, La. .... 723-25 Poydras St.  
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Pittsburgh, Pa. .... 121 Fourth Av.  
Salt Lake City, Utah. .... 46 Exchange Place  
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 New York City. .... 729 7th Av.  
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 Milwaukee, Wis. .... 406 Toy Bldg.  
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 Minneapolis, Minn. .... 608 1st Av. N.

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 Pittsburgh, Pa. .... 938 Penn Av.  
 Salt Lake City, Utah. .... 64 Exchange Place  
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 Detroit, Mich. .... 63 E. Elizabeth St.  
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 Detroit, Mich. .... 63 E. Elizabeth St.  
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New York City.....1600 Broadway  
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(Continued on page 54)

# The Value of Morale in Industry and Some Means of Developing It\*

By F. R. MOULTON

“THERE are, roughly speaking, four essentials for the success of an industry besides competent management. They are (1) capital, (2) raw materials, (3) labor, and (4) a market for the products. If any one of the four is lacking for a considerable period of time the industry is ruined.”

The managements of industry provide capital. They also take extraordinary precautions as to raw materials. “We find, for example, manufacturers of automobiles acquiring iron mines, and steamboat lines for transporting the ore; tire manufacturers buying rubber plantations in South America, and cultivating their own cotton fields in Arizona; paper manufacturers buying up spruce forests in Canada; producers and refiners of petroleum acquiring leases and titles to petroleum fields in all parts of the world; and similar things in every great industry.” Only when such precautions are taken can immense and highly efficient industrial organizations be created and maintained.

“Equal or greater attention has been given by the industries to developing and preserving markets for their products. \* \* \* One of the chief means is advertising. Locally considered, our mails are clogged with circulars and follow-up letters, our papers and magazines are half-filled with advertise-

ments, our elevated trains and station platforms are covered with invitations to buy, our landscapes are dotted with billboards, and our night sky is ablaze with electric signs. More broadly considered, great sales agencies are built up not only covering our own country but also extending into foreign lands; our government maintains a consular service all over the earth which helps protect our commercial interests; we hear of the importance of subsidizing a merchant marine; the question takes on an international political aspect in reciprocity treaties, in the doctrine of the open door, and it has even been an important cause of war.”

“The most important essential for industry is labor, whether its importance is measured by its cost, or by the difficulty of maintaining a steady and efficient supply of it, or by the dangers of violent explosions within it.”

There are two aspects to the question of maintaining a supply of reliable and efficient labor. One aspect is internal, the other is external. The former involves such problems as teaching the worker his particular job and developing in him a loyalty to the organization for which he works. The latter is concerned with such questions as the importance of his work to his fellowmen, a sincere belief in the fundamentals of the present organization of industry and society, faith in our political insti-

\*Abstract of a paper on the subject of Industrial Education, prepared for the fall convention of the Society for Industrial Engineers, held at Pittsburgh, Pa., November 10-12, 1920.

tutions, and loyalty to our country. Much has been done in the former line in many industries, but only a little in the latter. Yet the latter is far the more important.

It matters little how skilful a man may be if he desires to overturn our social order and to destroy our government. Revolutionary ideas have plunged whole countries into unspeakable woe and have been largely responsible for some of the worst strikes and industrial struggles we have experienced. They are appallingly costly. The strikers themselves estimate that the laborers lost more than \$100,000,000 in wages in the great steel strike. The loss to their employers must have been comparable, while that to the millions who depend directly or indirectly on the steel industry was much greater. This single illustration indicates the magnitude of the problem. It is folly to ignore it.

What can be done? Employers of labor can enter on a systematic campaign of education of the employees and their families—education in the fundamentals of the history and of the government of our country; in the economic, commercial and industrial geography of our country; in the evolution of our industrial order; and in the advantages of great aggregations of capital. This campaign must be carried out with perfect fairness and strict adherence to the truth, and with the frank admission that employers are often in error and that there will unquestionably be an evolution in industrial relations.

How can this be done? It can be done by developing and maintaining entertainment and educational centers, where, in connection with diversion and amusement, the lessons which it is desired to teach can be constantly driven home by means of posters, pictures, slides and moving pictures. That is, the object is to "sell" this country and its institutions, and the methods to be employed are essentially the same as those which are successful in selling soap or gum—namely, to keep certain ideas always before our people. The cost of doing this is not excessive. In fact, it is trivial in comparison with what is spent on securing unfailing supplies of raw materials and on advertising. An examination of the question shows that marvelous things can be accomplished at a cost of only one dollar per year per employee.

The direct returns to the industries will be much greater than the cost, for if the morale of the workers were improved so that they were only one per cent more efficient, even then the increase in their productivity would amount to twelve or fifteen dollars per year. And what is much more important, the benefits to our country as a whole would be immeasurable.

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## Announcement

We regret to announce that, on account of heavy work, Dr. Otis W. Caldwell has resigned as a director of the Society.

## Some United States History Reels of the Society for Visual Education

**T**O understand our country's history, to appreciate the institutions and ideals which today constitute the basic elements of American nationalism, it is essential for the student to have clear conceptions of the large movements that have brought about present conditions. Though he be able to recite historical facts with exceeding glibness and accuracy, no true knowledge of history is his unless he can read into those isolated happenings a larger meaning than appears on the surface. He must be able to fit them into a concrete whole, to interpret them correctly in the light of the whole background against which they transpired and of the subsequent developments to which they contributed.

One of the most important educational applications of the motion picture consists in this very matter of conveying to every learner, both clearly and quickly, the significant "sweep" of great movements. On the screen the essential features of a whole period of development can be compressed within a short space of time; and individual events of striking dramatic quality, that before stood forth with such vividness as to fill the entire scene, fall into their rightful places and are seen in their true proportions.

The animated map is a supremely valuable device for achieving such a bird's-eye view of an entire period, and the introduction of "scenics" at certain points insures sufficient concreteness to make the map meaningful, without distracting the learner from the central theme of the lesson. Such maps have been utilized to their fullest advantage in the series of United States history reels that have been developed by the Society for Visual Education.

\* \* \*

**I**N building the first of these films, "French Explorations in North America," the salient features of the great French movement of exploration and exploitation have been treated in such a way as to provide the pupil with an essential background against which to view the early development of our country. The

French happened to be the first settlers in the only region that offered easy access from the Atlantic seaboard to the interior. Once established at Quebec and Montreal, the open gateway to the whole central valley of the continent lay before them—and the door was shut to the English.

But the very advantages afforded by their geographical situation and the easy profits of the fur trade brought disadvantage, for the French were lured into exploring and claiming more territory than they could possibly hold. Trappers, traders and missionaries flocked to the New World rather than settlers; forts, posts and missions were established instead of homes, farms and factories which make for a permanent hold upon the land.

\* \* \*

**T**HE second reel, "English Settlements in North America," is the counterpart of the first, taking up the principal English settlements in the order of their development, the gradual expansion of the colonies, and the barriers that hindered their free growth to the west.

Of large importance in the study of the colonial background of our national life is a clear conception of the way in which the ideals of self-reliance and local self-government brought from England found a favorable field for growth in American soil. Each colony developed independently of the others, and for a long time quite free from interference by the mother country. Thus, the Anglo-Saxon genius for self-government had full scope.

Both the French and the mountains blocked the westward expansion of the colonies. But in the century and a half of intensive development within that narrow ocean strip to which they were limited, a firm foundation was laid upon which to build a great nation. Farms were being cleared that would have remained wilderness could the earlier settlers have passed easily to the richer lands of the West. Institutions were stabilized that would have been impossible had the population been widely scattered.

Such is the background supplied by the first two films in United States History.



## FRENCH EXPLORATIONS IN NORTH AMERICA

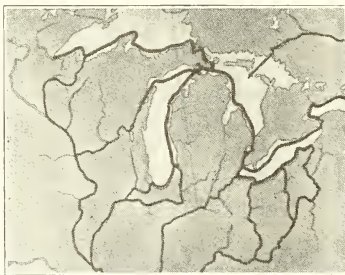
**Purpose of the reel:** To picture the extent and character of the French occupation of North America, as a background for the study of the first of the great events that brought our country into being.

That event was the French and Indian War, which determined that the new nation was to be English and not French. The struggle between France and England for the possession of North America, by giving the Scattered English Colonies a problem whose solution forced them to think and act together, bound them in closer union, and proved one of the most significant of the influences that combined to transform Englishmen into Americans.

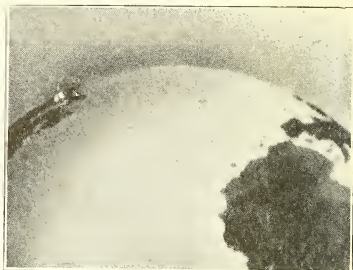


CANOES ARE CARRIED AROUND ROUGH WATER

At Detroit, a point of military advantage, fort and trading post are built. The animated exploration line continues along the St. Clair River, through Lake Huron and the Straits of Mackinac, and along the western shore of Lake Michigan. Other lake routes are pictured. But since the French have come to the New World as trappers, traders and missionaries, they leave the lakes and push resolutely into the interior. Animated maps trace their progress, until their thin line of forts, missions and trading posts stretches from the St. Lawrence to the Gulf of Mexico. They found few settlements. We see LaSalle, and the map visualizes his famous journey to the Mississippi via the Chicago, Desplaines and Illinois Rivers. Ruins of an old fort near St. Louis tell of the French dream of empire.

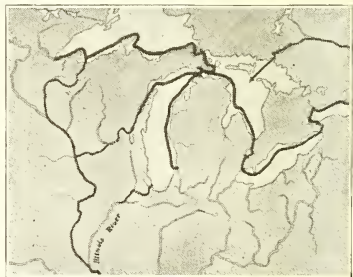


THE REGION EXPLORED BY THE FRENCH BEFORE 1750



CARTIER CROSSES THE ATLANTIC AND DISCOVERS THE ST. LAWRENCE RIVER

In an animated drawing, a vessel sails from France to the Gulf of St. Lawrence. As the gulf narrows, the ship gives place to a moving line which traces the route of these daring French explorers up the St. Lawrence River. The map points out Quebec and Montreal, and then upon the screen looms the great hill which Cartier christened "Mount Royal." The animated line follows the route up the Ottawa River, overland to Lake Nipissing, then by water to Lake Huron. Little by little the French explore the Great Lakes region. We are shown a detail map of the Niagara River and Father Hennepin's quaint sketch of Niagara Falls; and then the scene is pictured for us by modern motion picture views. Moving pictures show how the explorers pass rapids and waterfalls by "portage."



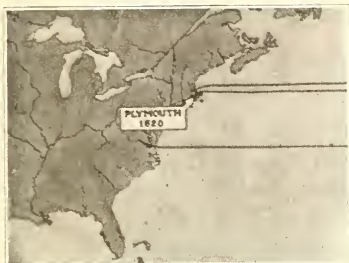
THE SIEUR DE LA SALLE PUSHES ON TO THE MISSISSIPPI

The western routes were developed first, because the Indians there were less dangerous than the hostile tribes of the East. Gradually, however, the animated lines of travel and trade progress eastward, until they reach the eastern shores of Lake Erie and the head waters of the Ohio. At strategic points in the Ohio Valley, forts and posts are built. Here the French are standing at the very back door of the English colonies, blocking their growth to the west. It creates a situation which is bound to bring about a conflict for the possession of North America. By 1750, as the map makes clear, France is laying claim, by right of exploration and occupation, to all of the great central valley of our continent.

## ENGLISH SETTLEMENTS IN NORTH AMERICA

**Purpose of the reel:** To set forth the main facts of the English settlements and of colonial development.

While the French were exploring the interior, aided by the ready routes provided by the St. Lawrence gateway and by the low portage between the Great Lakes and the Mississippi Valley, the English were held to the seaboard. The Appalachians formed a barrier averaging 300 miles in width between tidewater and the Ohio Valley. But the English colonies were growing rapidly, and settlers began to push into the hills. It was only a question of time before they would feel the urge to sweep over the last ridges into the rich country beyond.



### IN 1620 A LITTLE BAND OF LIBERTY-SEEKERS FINDS PLYMOUTH COLONY

There are pictures of the landing of Hendrik Hudson, stern old Peter Stuyvesant—the Hudson River—the Dutch church at Albany—the Van Rensselaer Manor House. The moving line enters Delaware Bay and stops at the Swedish settlement of Fort Christina. As the English absorb these various settlements, the names "New Amsterdam," "Fort Orange" and "Fort Christina" fade out, giving way to "New York," "Albany," "Wilmington." By animated shading the map shows us the English settlements spreading inland, until they reach the foothills of the Appalachians. We see, pictured types of the homes the English have been building—cottages, mills, substantial brick mansions—all evidence of the permanent quality of the English colonization movement.



### FRENCH EXPLORATIONS AND ENGLISH SETTLEMENTS BY 1750



### THE FIRST ENGLISH SETTLEMENT IS MADE AT JAMESTOWN IN 1607

The animated map brings a moving line to the location of the first English settlement in America—Jamestown, 1607. On the screen flashes a portrait of doughty Captain John Smith. We see a view of early Jamestown and the ruins of the very church where these Virginia settlers worshipped. By another line moving westward from the Old World, the map visualizes the coming of the Pilgrims in 1620. Touching first at Provincetown, at the tip of Cape Cod, they settle finally at Plymouth. The scene of the historic landing is pictured on the screen. Other colonies are planted—Boston, Windsor, Wethersfield, Hartford, Providence, Exeter. After this the animated line takes us to the settlements of the Dutch—New Amsterdam, at the tip of Manhattan Island. Fort Orange, up on the Hudson.



### THE BARRIER THAT LIES ACROSS THE PATH OF THE ENGLISH PIONEERS

The Appalachians block further westward movement. Animated maps and scenic motion pictures show how tremendous is the barrier. There is but one easy pathway open to the West—the Hudson-Mohawk-Oswego route. The animated map outlines it in clear detail. We see the English following this route, building fort and trading post at Oswego on Lake Ontario. But the French control the Upper Lakes and the Mississippi; they are also in the Ohio Valley. All gateways to the West are closed unless their hold upon the interior can be loosened. Animated maps picturing French and English areas of control again visualize the problem; and a title—"This situation caused the English and French to fight for control of North America"—leads up to the third reel of the series.

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*See Next Page.*

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New Era Films,  
207 S. Wabash Ave., Chicago, Ill.  
Wm. L. Sherry Service,  
729 Seventh Ave., New York City.  
Society for Visual Education,  
327 S. LaSalle St., Chicago, Ill.  
U. S. Dept. of Agriculture,  
Washington, D. C.  
U. S. Steel Corporation,  
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METAL ARTS CO., Dept. 8, Rochester, N.Y.

## MISCELLANEOUS NOTES

*(Continued from Page 33)*

edged on the left side and rounded on the right."

On another occasion, to some "men in miniature" (as Rudyard Kipling says) seven or eight years old, M. Collette gave a film-lesson on the locust.

"There are animals which have bones and others which have none. Can you name examples?" asked the professor.

On the end of a bench a little fellow, about as tall as a table, raised his hand. "The Crayfish," he said. Another offered "l'hanneton." He should have said "le hanneton," and when it had been explained to him that the h on that word is aspirate and hence prevents elision, the vivid lesson on the locust began.

For little Parisians, it was indeed real life of the fields that was unfolded before them in this excellent film; from the white worm they saw digging his subterranean galleries, chiseling the vegetable roots, and coming forth from the ground after three years—to the destruction of the pest by the peasants, who were shaking the trees and putting the harmful insects into the fire.

These children are infinitely sympathetic to such teaching, their interest is intense. Not for an instant did their eyes wander. They were genuinely entertained by the very lesson which was teaching them. Fathers and mothers can desire but one thing: to see teaching by films extended to every school.

★ ★ ★

**A**N ARTICLE in the *Literary Digest* for June 26th, quoted from the *Baltimore & Ohio Employees' Magazine*, bewails the horrible outrages done the general railroad system by moving pictures, and appeals for a course in railroad instruction which will enable a scenario author to distinguish at least between a horse car and a Pullman. The liberties that directors and authors have taken with the basic principles of railroading made it impossible for railroad men to remain sanely in their seats and watch a railroad picture through to the awful end. For instance, in the movies, deep-dyed villains swing themselves debonairly along the side of a train running

seventy miles an hour, without even disarranging an eye-lash; noble heroes leap lightly from car to car, beat the engine to the switch and save the beautiful, unconscious damsel, who is bound to the rail and destined by foul machinations to be rent asunder. Again, the hero using only the left hand uncouples the transcontinental flier and toys around with a little three hundred pound gangway.

The necessity for observation of small consistencies in regard to the simple mechanics of trains and to the rules of the Interstate Commerce Commission never occurs to the fevered invention of the scenario maker.

We are told that there is a slight change for the better, however, for the crimes committed in the name of imagination are not so deadly as of old and the public is showing a tendency to demand at least a simulation of the truth in its vicarious cinematal traveling.

★ ★ ★

**"A** COMPREHENSIVE, excellent and practical plan for the reduction of juvenile delinquency by community effort has been prepared by O. F. Lewis, the General Secretary of the Prison Association of New York, whose offices are in New York City. The plan discusses prevention by use of team work. It suggests the organization of leisure time and recreation as one of the best crime substitutes known. Dr. Lewis says: 'For the multitude of beginners in delinquency, delinquency is attractive, it cannot be prohibited by the "Thou-shalt-not" method. We can reduce delinquency and crime by setting up counter-attractions and equivalents that are interesting, useful and constructive.' He suggests a canvass of each community and gives one hundred questions suggesting the organization which may be of assistance in working out a comprehensive plan. It is interesting to note that among the various agencies is included the National Board as the society best able to assist in handling motion pictures as an important phase of the whole question of entertainment and amusement. This pamphlet and the ideas contained in it should be utilized in most of the com-

*(Continued on page 58)*

## VISUALIZING MYTHOLOGY

*(Continued from page 29)*

of the utmost importance to the ancients. All the gods and goddesses had their attributes and their symbols. They themselves, in turn, were but symbols. Such study is necessary to preserve the correct atmosphere. Hermes without his staff and winged sandals would be ridiculous; Poseidon must have a trident, and hair and beard that in their waving, tangled masses suggest the sea.

The transcription of mythology to the screen will mean visits to libraries, art galleries and museums. Comparisons should be made of representations of each character by different artists of antiquity. Vase paintings, reliefs, coins—each of these—will contribute its own interesting wealth of fascinating details when it comes to the neglected field of Greek mythology, for the benefit of that wonderful library of educational motion pictures which is to be the glorious development of coming years.

## MISCELLANEOUS NOTES

*(Continued from preceding page)*

munities of the United States."—*The Bulletin of the Affiliated Committees for Better Films for May, 1920.*

★ ★ ★

**A**N ARTICLE by Muriel Bailly in the June number of the *Pan-American Union* should be of interest to all devotees of the cause of visual education. The article is entitled "Moving Pictures in Pan-America" and deals generously with some phases of the subject not directly suggested by the title.

The value of any visual appeal in general is dwelt upon discursively, but the tremendous importance of moving pictures is emphasized in particular; the definite statement is made that the cinema is to be the agent that will solve the problem of social unrest because of its gigantic educational possibilities. There then follows detailed mention of the rôle that various inventors and moving picture pioneers have played in blazing the trail that is now a macadamized boulevard to financial prosperity.

From this point the flow of the argument carries you smoothly and lands you in South America, where the native is apparently arousing himself from his perpetual siesta under the banana tree

*(Continued on page 62)*

## CAMERA PROJECTORS

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## *Ford Educational Library*

**University Professors** are directing at Ford Motion Picture Laboratories, Detroit, the production of the most remarkable educational motion pictures ever conceived. These educators are writing and—regardless of costs—cinema experts are filming what is unquestionably the greatest thing in the world for Teachers and Pupils.

**Authors**—Every professor engaged in this work is distinguished in his own particular subject. They come from the University of Wisconsin; University of Minnesota; School of Education of Cleveland Public Schools; and Iowa College of Agriculture and Mechanical Arts. Other Universities, Schools and Colleges are from time to time to be drawn on.

**First Four Subjects**—The first four subjects cover—Geography, both "Regional" and "Industrial"; History; Agriculture; and Civics. Choice of these films may be made to fit a Teacher's subjects and schedules; and a film may be kept an entire week. A Synopsis goes with each film, fully explaining its use. When a Teacher has run a couple of films she has become an expert in visual education.

**To Teachers**—How often does a history Teacher long to take her class over the route of Paul Revere's ride from Cambridge to Concord and Lexington! It is the ride of a lifetime today. "Ford Library" lets you and your pupils *take that ride* with its thrills! No one who has thus taken it can ever forget the sights and the history which startle one as he visually rides on that road!

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**Ford Educational Library**—"Ford Educational Library" has been chosen as the name for these films. Henry Ford's program and plans for this work are far-reaching. It is, however, even now easy to see that "Ford Library" will furnish the Teacher the maximum of interest and instruction which brains and skill can produce and money can buy. The subscription price, however, is to be kept incredibly low. Every Superintendent, Principal and Teacher in America owes it to himself and his profession to address us for full information on the coupon below. Every school should on learning the facts promptly become a subscriber to "Ford Library," which, may we say, is produced without thought of profit.

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Gentlemen:—Please give me full information on Ford Educational Library. I am especially interested in the following subjects:	
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# Among Other Things They Say

*From a Colorado Educator:*

" . . . I have read over your lists of committees and feel sure that, with such able men to direct it, the work will not degenerate into entertaining the pupils, but that the original thought which prompted the society will be kept constantly to the front.

"When we look over the work of school pupils and find how many years students can spend carrying out the programs of schools and yet finish with so little right training and so small an amount of accurate knowledge and such poor habits of research and study, one is almost discouraged. I have always taken the attitude that school should stand to the pupils for work, but for pleasant work, and it is with the hope that pictures such as you describe would be not diverting but rather awakening and clearing to the mind, that I am desirous of seeing them established in my school. . . . It seems to me that if the films are as clearing to the mind as I can fancy they might be, there should be more time left for the training which I also desire for them. . . ."

A. W. V. (Principal).

*This is what a Kansas attorney says:*

"I enjoy reading *VISUAL EDUCATION*. It is a great publication. . . ."

C. F. T.

*From a librarian in California:*

"I have seen recently a copy of your very interesting publication and hasten to send my subscription. As I am a librarian of a large school it is of special interest along educational lines. . . . I am sure all who are fortunate enough to read one of your magazines will be enthused as I have been in *VISUAL EDUCATION*."

I. G. S.

*An Illinois Principal says:*

"I am attending school at the University of Indiana and am in a class of High School teachers, mostly principals and superintendents, that is making a study of various phases of high school conditions. I have been assigned to write a report upon visual instruction.

"So much for an introduction. I have come across Volume 1, Nos. 2 and 3 of

your very admirable magazine and it has come to me that you may be willing and able to give me some sources of information relative to this phase of modern education. I do not know what plans your Society has in relation to this phase of school work, nor do I know whether or not your timely magazine has come to the attention of the men and women of this class. They are all, or at least nearly all, people who next fall will carry on the work of instruction and management in the schools of the state. I have so far found but little in the library of the University relative to this subject with exception of your two copies of *VISUAL EDUCATION*.

"I am wondering if you could make any suggestions as to sources of material or if you would care to send me any literature you have at hand on the matter. . . . If I can make the class see the value of visual instruction as well as your magazine has made me see it, I feel sure that some good will result."

J. W. J. (Superintendent).

*From an officer in the American Social Hygiene Association:*

"I am very much interested in your May number of *VISUAL EDUCATION*, and find the articles helpful and suggestive for my work, which consists primarily in producing and distributing motion pictures on social hygiene. . . . I was interested in the list of educational films. . . ."

H. E. K. (Director).

*An Officer in a California Woman's Club writes as follows:*

"A friend loaned me a copy of the May *VISUAL EDUCATION* and I gladly send in my subscription. Cordially wishing success."

S. F. (Cor. Sec.)

*Coming from De Soto, Missouri:*

" . . . I have been receiving your magazine for some time and like it extremely well. I wish you success."

L. M.

*From a member of the faculty of Teachers College, Columbia University:*

" . . . The June number is a corker."

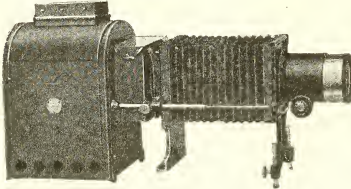
E. F.

(Continued on page 69)

"McIntosh Lanterns are Honest Lanterns"

## The Classroom

is the place for Visual Instruction. No more marching thru the halls—no more disturbance and skylarking. Just attach an Automatic Sciopicon



to any incandescent socket and turn on the current. Remarkably efficient—extremely simple. Ask for circular.

### McIntosh Educational Slides

are used all over the country. They are listed in four catalogs:

A of Agriculture, S of Science, E of Industries, H of History and Civics. Which do you want?

**McINTOSH STEREOPTICON COMPANY**

30 E. Randolph St., Chicago, Ill.

## MISCELLANEOUS NOTES

(Continued from page 58)

and begging in enlightened style for the celluloid reel.

The facts presented are most interesting. South America is proving to be an El Dorado for American moving picture syndicates, for in spite of the enormous footage exported annually it is still impossible to supply the demand. All of these films, of course, have to be retitled in the language of the state to which they are sent. Frequently it has happened that these subtitles have been clumsily translated and the meaning thus rendered obscure, but this difficulty, like many others, is being obviated as the service is perfected.

Directors also are looking southward in their search for new stuff, settings, plots, etc. Griffith, notably, staged most of his "Idol-Dancer" in Cuba, while Prizma has made many interesting studies in Guatemala. In Peru an American has organized a big producing com-

## THE WORKING MUSEUM

(Continued from page 26)

He will not use it. It will fall into neglect. Ultimately it will be scattered." Does a biological laboratory or a chemical laboratory cease to be with a change of teachers? Is it not demanded of the teacher of physics that he maintain and use a laboratory? Why should it not equally be demanded of a teacher of history that he use a museum?

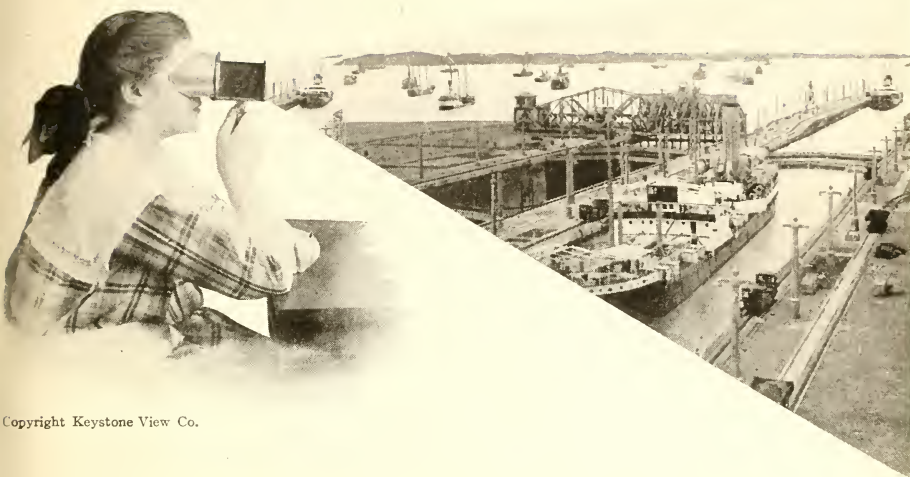
Finally appears the stern advocate of "hard" pedagogy. "Here is another fad," says he, "in which there may be a great deal of entertainment but little of knowledge." The genuine working museum of history is only incidentally an entertainer. Primarily it is a most efficient teacher. The individual and class that spend a little time in our Colonial Room are indeed entertained. They also learn much of the past at first hand. Over and above everything else; they find themselves in an atmosphere which affords them an *actual experience*. They understand the past, not because they have learned about it and remember it, but because they have lived precious moments in the actual surroundings of the days of yore and therefore they *know*. Such an experience of visual teaching abides with the student through life.

---

pany which is to export on a large scale. The sunny, clear climate there is said to be as satisfactory for photographic purposes as that of California, while the storied, romantic backgrounds are infinite in number.

It is true that French and Italian films are greatly in demand in some parts of

(Concluded on page 72)



Copyright Keystone View Co.

## She Sees the Panama Canal

The stereograph makes a vivid and lasting impression.

Interest and eagerness to learn are stimulated through the daily use of one or two stereographs that fit the day's lesson.

Use lantern slides for recitation and review.

Let the pupils talk about slides which they have already seen in stereographic form.

Recitations are made a pleasure, and excellent training in English is given by this method.

The Keystone System, made up of 600 stereographs and their duplicates in slides, covers all the important parts of the world.

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An index, cross referenced, points out several thousand teaching points, visualizing geography, history, literature, the manual arts, etc.

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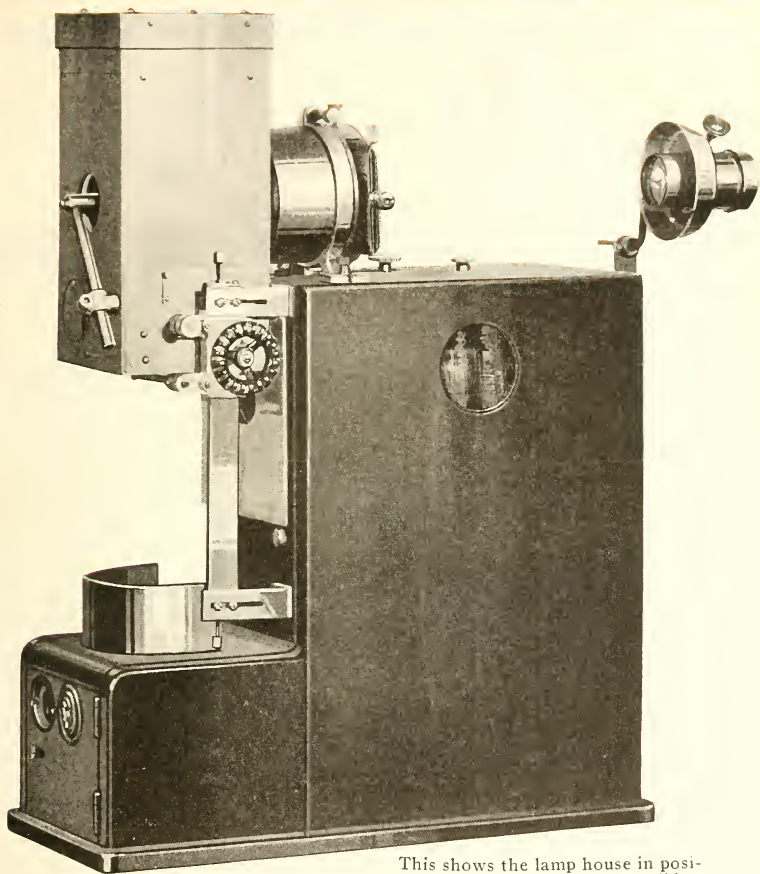
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This shows the lamp house in position for projecting lantern slides.

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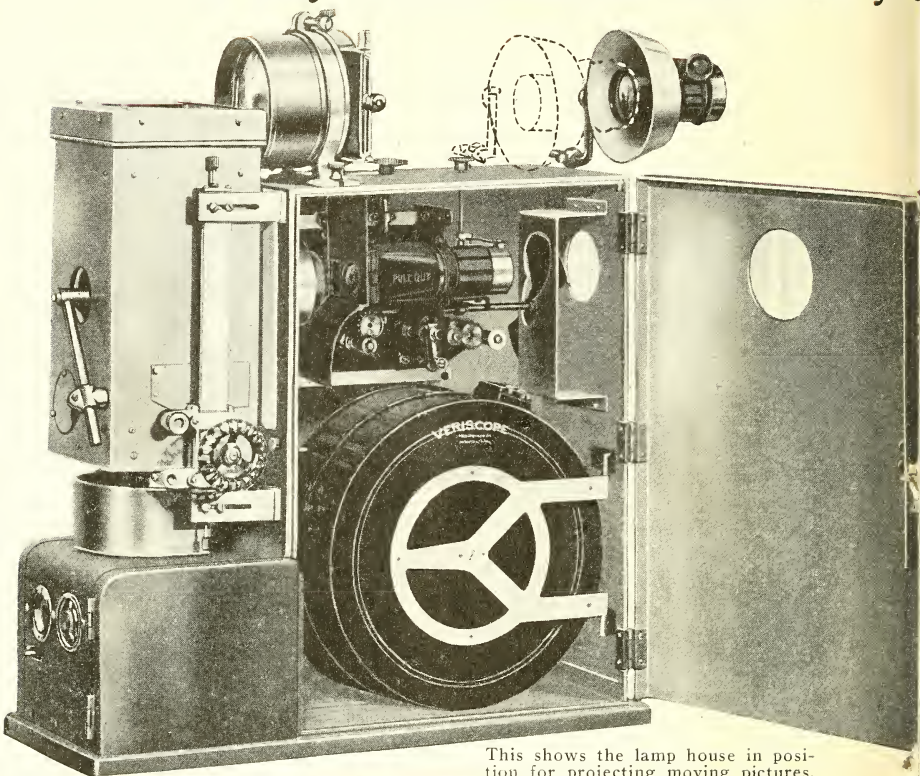
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HERE is the universal machine,—a semi-portable moving picture Projector which is the *superior* of any similar machine ever made, with a *Stereopticon Attachment*, making an ideal combination.

**Read the following pages**

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## The Only Portable Machine with which you



This shows the lamp house in position for projecting moving pictures.

### Notable Features to be had

**SAFETY SHUTTER**—drops automatically the instant the machine is stopped.

**CENTER DIVIDING METAL FILM MAGAZINE**—entirely encases the film, and spells "Safety First" always. Be sure the projector you buy has center dividing metal magazines.

**CHANGING LAMPS**—Merely slide the holder out.

**ONLY INDEPENDENT MOTOR-DRIVEN**

**RE-WIND**—The projecting mechanism is at a dead standstill during re-winding, meaning double the life for a Veriscope.

**INSTANT FRAMING**—You never have to stop a Veriscope to frame the picture.

**OILING**—Most convenient, and as thorough as on any piece of machinery built.

## All "Veriscope" Models take ALL "standard width" film

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## can show *slides while changing reels!*

You can run moving pictures alone, or lantern slides alone. But its greatest feature is its *instant* adaptability from one to the other. Think of the advantage of being

able to show a few slides (such as next week's announcements, or advertising slides) and thereby *hold the attention of your audience* while you are changing reels.

The "Veriscope" is equipped to be attached to any light circuit of either 32 or 110 volts, either alternating or direct. By using a rheostat any 110-volt equipped machine can be used on a 220-volt circuit. The 110-volt equipment consists of a 1000-watt lamp, which has sufficient illuminating power to throw a picture up to 125 feet. The 32-volt equipment may be either a 600 (20 amperes) lamp, monoplane filament, or a 900-watt (30 amperes), the power of which is sufficient to project a picture an almost unlimited distance. The lamp house slides on rigid, metal supports. A simple but strong bracket and catch holds it when in its "up" position for showing lantern slides.

For showing Stereopticon Slides there is a Standard Condenser Mount,—easily removable, when not needed,—also a Stereopticon Lens, adjustable both in lens barrel and bracket. The Slide-carrier alone can be removed by simply loosening a screw. All of the Stereopticon attachments are demountable. The whole equipment fits into a compact case for transporting. The dimensions are: 20 inches high, 24 inches long and 8 inches wide.

For projecting stereopticon slides in the "Veriscope," it is unnecessary to have all of the illumination that the 1000-watt lamp gives. This necessitates reducing the light, which we do automatically with the starting and stopping of the projector.

When you have finished projecting a film and you shut off the motor, this automatically reduces the voltage of the lamp, thus lowering its illumination and reducing the heat that is generated.

After showing slides and you are ready for the next film, the lamp-house is lowered to its proper position, when the illumination comes right back to its maximum. This applies to all voltages, whether 32, 110 or 220.

This device is absolutely original on the "Veriscope" and prevents the cracking of slides which often occurs from overheating, as the slightest cool draught on over-heated condensers or slides will invariably crack them.

## in this remarkable projector

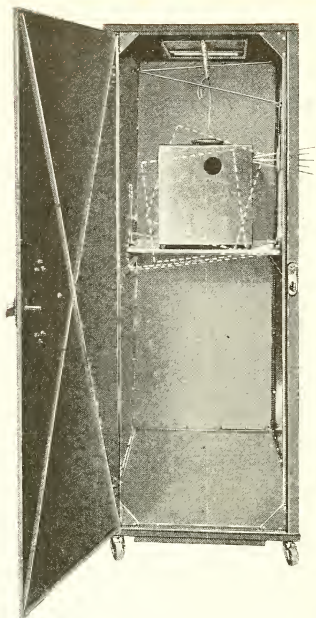
**POSITIVE CHAIN-DRIVE FRICTION TAKE-UP**—A motor-driven fan and three exhaust ports keep the lamp-house so cool that you can change your lamp instantly, without annoying your audience by holding them 15 to 30 minutes.

**INSTANTANEOUS FOCUSING DEVICE**—Lens can be taken out for cleaning, etc., without removing shutter. **SAFETY ROLLERS**—Nothing can follow film down to the reels below.

## films, both regular and Eastman non-inflammable

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## The finest Booth ever designed

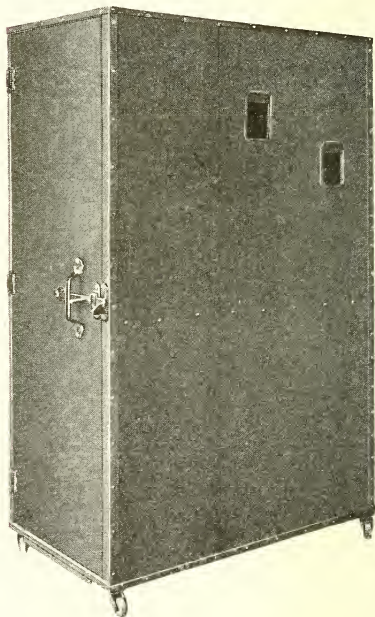
In schools and churches, or anywhere else, where a booth is needed for use in connection with a "Veriscope" Projector, we can furnish the finest PORTABLE booth ever designed. This is mounted on rubber tired castors, and is of such dimensions (78 inches high; 30 inches wide; 48 inches deep), that it can be taken from room to room, THROUGH ANY DOOR without taking it apart. This is the only booth on the market that permits the showing of pictures from room to room and letting the various classes remain in their respective rooms.

**Will go through any doorway, without taking apart—**

The ventilating door in the top, as well as the slides over the two openings (for the picture and operator's look-out) work automatically and instantly. The shelf for the projector is adjustable to various angles, so as to meet the conditions of distance and position of screen. The cabinet is of 20 gauge iron; black enamelled; with spring-hinged door and heavy catch.

**Price \$100.00**

Both the "Veriscope" and Booth are manufactured by



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Chicago, Ill.

# Zenith Safety Projector

WE offer this machine to you with confidence in its merits because of the many letters we have received from SATISFIED CUSTOMERS, some of whom write as follows:

"We sincerely believe it to be the finest machine of its kind on the market. We have used it continuously for months."

A pastor writes—"We are enthusiastic about it. It does everything you said it would, and even more."

A large Industrial Company writes:—"Demonstration of the Zenith was made at 105 feet with very satisfactory results."

If you are at all interested in having motion pictures and want the best, you also want the best available machine to project them, we have it in the ZENITH. It is a machine of proven value.

Write us about it. Send for literature to

## RUTLEDGE & COMPANY

35 S. DEARBORN ST.

CHICAGO, ILLINOIS

### AMONG OTHER THINGS THEY SAY

*(Continued from page 61)*

*A fellow producer says:*

"... Yours is the most vital step that has yet been taken in the right direction, as far as education is concerned, and remember we are all with you. Wish you success," M. C. C.

*From a prominent Chicago woman practicing law:*

"Thank you very much for the copies of VISUAL EDUCATION which came this morning. I shall see that they reach people who will read them with appreciation."

"I am very much interested in the announcement that there will be a department for reviewing films of an educational nature, put out by commercial companies. I think this a splendid plan, and should be glad to assist in furthering it."

"The growth of the magazine is encouraging to note and I think you are to be congratulated on its excellent make-up."

F. W. S.

*An editor of a southern agricultural journal says:*

"Please let me have a sample copy of your magazine, as I have been intensely interested in visual education for a great many years. I was delighted to learn the other day that some school people are seeing the value of this natural method of getting an education."

J. S. (Editor).

*Heard from an Illinois Superintendent:*

"'I'm Fer You.' We will need it in our Community High School next year. Therefore and 'hens' I am enclosing a money order for one year's subscription."

L. K. F. (Superintendent).

*From the Secretary of the National Committee for Better Films:*

"As a member of a school board of no mean state, namely, New Jersey, I am intensely interested in questions of courses of study and the day by day application of methods in the education of the youth. I recognize that many of these methods have stood the test of time but I also recognize that some educators are a trifle 'hipped' on certain schemes which may or

*(Concluded on page 70)*

When you write, please mention VISUAL EDUCATION



## "School Efficiency Service"

—in—

# Motion Picturedom

## Demands

AS TO MACHINES—That you secure the best for you, to meet the special needs of your particular school;

AS TO FILMS—That you have a means of keeping in touch with the many sources of service that are open to you.

## The Demands Met

It is our ambition to cater to those who realize that the subject of Motion Pictures for Schools is one big enough for a highly specialized attention, and who therefore wish to have the benefit of expert advice from a firm that is in a position to be impartial in recommendation.

We shall endeavor to cater to whatever you may want, on the basis of SATISFACTION GUARANTEED OR MONEY BACK. "Tell us your troubles."

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EXPERT LIBRARY BUILDERS—  
MOTION PICTURE SPECIALISTS

**Educational Department**

(SUBURBAN TO CHICAGO)

**DOWNERS GROVE, ILLINOIS**

## DEPARTMENT OF BEGIN- NINGS

(Continued from page 37)

- (c) On ocean to New Orleans, places passed:  
Atlantic City.  
Charleston.  
Savannah.  
Pelican Island.  
Palm Beach.
2. Arrival at New Orleans:  
Delta.  
Shipbuilding.  
Hauling rice.  
Shipping cotton.
3. Trip up Mississippi River:  
(a) Stop at St. Louis.  
End wheeler.  
On levee, products.  
Cornfields.  
(b) Minneapolis.  
(c) St. Paul.  
Hauling logs.  
St. Anthony Falls.  
Ore mining.  
Miners at work.  
Iron steamer.

### Application:

Write an account of your trip to a friend at home.

E. B. PENDLEBURY,  
Supervising Principal,  
Ellwood School, Philadelphia

## AMONG OTHER THINGS THEY SAY

(Continued from page 69)

may not bring satisfactory results in character and also in ability.

"To perform the particular work in the world, that boys and girls are called upon to accomplish in their own limited sphere, the motion picture has an important part to play, and it will do its share only after a most intense study of the elements which go to influence the child's mind and the child's will.

"Perhaps I am a trifle 'daffy' on the influence of the indirect and also of the practical methods of reaching boys and girls 'where they live.' I have found that handling tools, making trips, playing games, seeing people and seeing nature, when the attention of the child is captured, all have remarkable effects. This method of education is not systematic but is co-ordinated by the children in remarkable fashion. As a substitute for actually seeing people, nature, processes, etc., the motion picture has a valuable place.

"This letter comes no nearer suggestions of methods than the former one. Some day, however, as an ignorant layman I shall like to sit down with educators and work the thing out systematically.

"Wishing you abundant success in your work of stimulating thought along these newer lines in education." O. G. C.

*From a Minnesota Club Woman:*

"I ran across a copy of VISUAL EDUCATION at the Public Library at a most providential time, for I had just finished a hot discussion with a very capable elderly English teacher who opposed the use of moving pictures in education. You can imagine my surprise and pleasure in seeing VISUAL EDUCATION on the rack in the reading room, for it is the first material I have found that covers the ideals I have been working for in my educational talks. . . .

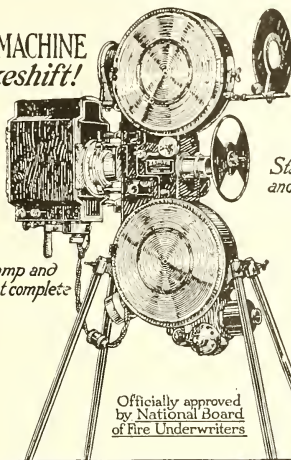
"If I can be of any assistance in this great progressive movement, let me get in before the tide comes in. . . . I assure you I will consider it an honor to be of service. . . .

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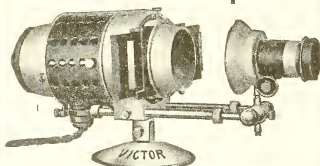
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## MISCELLANEOUS NOTES

*(Concluded from Page 62)*

South America, particularly in Costa Rica and Colombia, but elsewhere the use of American film predominates; as in Bolivia, for instance, where 95 per cent of the film exhibited is of American make. Nowhere from Tierra del Fuego to Panama is the cinema unpopular, the theater unattended.

Dramatic tastes vary in different parts of the country, but romantic drama and wild west stories seem to be universally enjoyed. Mexico, most peculiarly, is reported to revel in scenes showing a naughty little derringer puncturing human anatomies in vital spots. News reviews and educational reels are very favorably received, however.

The various governments are learning that it is to their advantage to back moving picture enterprises and in many cases are responsible for the manufacture of films expository of their industries and the geography of their country. In Honduras, the theaters are requested to furnish a certain number of performances per month free to the public. The city of Buenos Aires shows pictures daily to all immigrants, maintaining them free of charge for one week at the Immigrant Hotel. Pictures are used to keep labor contented in remote mining and farming districts.

In concluding, Miss Bailly gives a generalized account of the work done by churches, schools and museums in the United States in circulating film and thus promoting the spread of universal understanding. The Bureau of Commercial Economics, in particular, is doing a most valuable work in supplying films to the South American and Latin-American states. Business concerns strongly advocate the use of American films in the southern continent, having found that where pictures of our ideals, environment, customs, etc., are shown, the way is made easy for their sales work.

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By C. A. BARRY

Some men believe they are worth a great deal more money than they are getting. Others know in their hearts that they are not worth what they are paid. But this concerns only those **who really feel underpaid**.

The trouble with most of us is that we use only about one-tenth of our available brain power. And we earn about one-tenth of our possibilities. Let us see what the reasons are.

No one questions the close relationship between health and efficiency. We know that we cannot do our best work when we are bothered by a cold, a bad stomach, or an ache or a pain anywhere. But few people realize that they are below par physically **most** of the time. Only on rare occasions have they the energy, "pep" and vitality needed to win in the daily fight for **more than** a mere living. And on these rare days they tackle each job like supermen. Work melts before them as snow before a blow-torch. And they wonder why they cannot feel that way always.

## Like Steam for the Locomotive

But nearly every day they are handicapped by insidious, unknown, unseen forces which are tearing them down; destroying their brain capacity and keeping them below par in earning power. Yet, they "feel fine." There may be no pain, no aches, no outward warning of what is going on within. Only their pay envelopes show that they are not using all the energy they should. A locomotive is powerful only when steam is utilized. A human being may have a million dollars' worth of **brain**—but if he lacks the energy, the **force** to put it to **use**—he is like a locomotive without steam.

You can never achieve your greatest success unless you use **all that is in you**. And you never use all of your brain power; realize on your experience or reach the position that

you hope for if you are not up to par physically.

## Nature's Gravest Error

We instantly heed the warning clang of a street car gong or the shriek of an automobile horn. We know that they warn us of impending danger.

But the greatest tragedy of Nature is that she gives **no** outward warning of impending physical disaster until it is almost too late to help. If we were warned by **intense pain** when the **first** sign of Diabetes, Bright's disease, or other serious ailments appeared—we could correct the trouble easily. But Nature does not give us pain until we have abused our bodies to the limit.

And for this reason, thousands of men and women are living every day with a serious sickness and do not know it. It is as though your home burned down without a sign of smoke or flame. That is why men die "suddenly." They have been passing on for years but **did not know it**. They thought that **pain** was nature's **only** warning—but they were wrong.

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Notice  
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Page 39

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(Continued on page 49)

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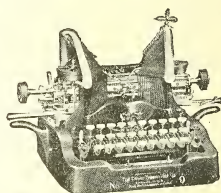
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(Continued on page 46)





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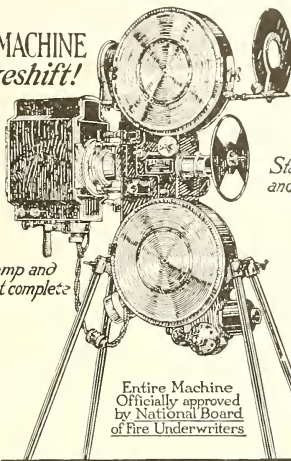
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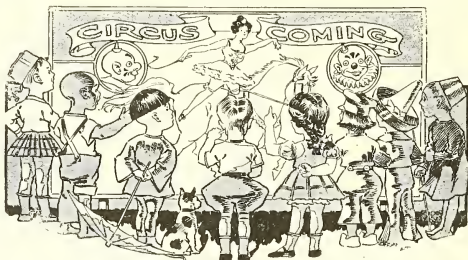
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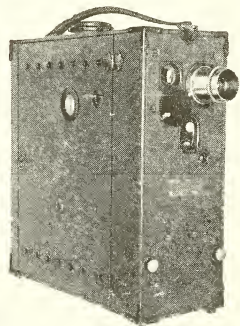
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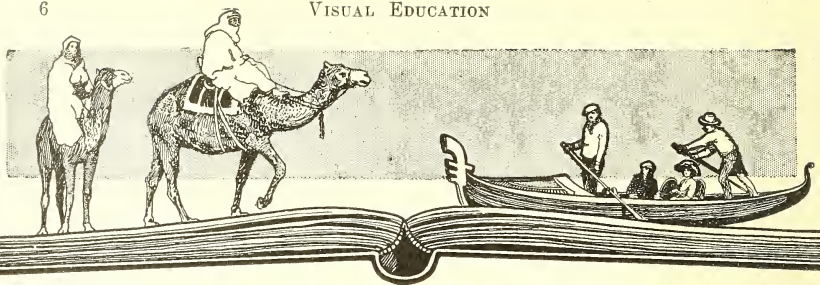
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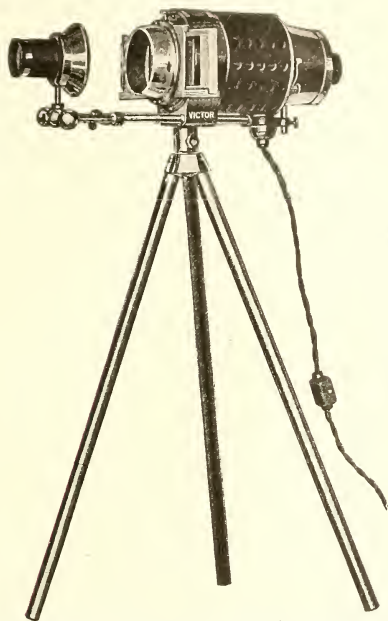
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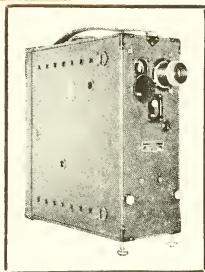
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SERIES I	SERIES II	SERIES III	SERIES IV	MAPS
1	101	...	...	The World: on Mercator's projection.
..	*101Hc	...	301Hc	The World (continents): Homalographic projection.
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..	*101S	...	...	The World (continents): Sinusoidal projection.
..	*101P	...	...	The World in Polar Hemispheres: Lambert's azimuthal, equal-area projection.
..	...	201PB	...	Same map as 101P showing Isobars for January and July.
2	102	...	...	North America: on Lambert's azimuthal projection.
3	103	...	...	South America: Sanson's projection.
4	104	...	304	Europe: conic projection.
5	105	...	...	Asia: Lambert's equal-area projection.
6	106	...	...	Africa: Sanson's projection.
7	107	...	...	Australasia: Mercator's projection.
9	109	...	309	United States of America: conic projection.
10	110	...	...	United States of America: state-outlines only: conic projection.
..	111	...	...	Canada: conic projection.
..	112	...	...	Mexico: conic projection.
14	114	...	...	The British Isles: conic projection.
16	116	216	...	Europe, Western and Southern: conic projection.
17	117	...	...	France: conic projection.
18	118	...	...	The Spanish Peninsula: conic projection.
19	119	...	...	Italy: conic projection.
20	...	...	...	Central Europe: conic projection.
21	121	...	...	The German Empire: conic projection.
24	124	...	...	The Levant: conic projection.
..	132	232	...	United States of America, by counties, with names: conic projection.
..	133	...	...	Chicago and vicinity: conic projection.
51	151	...	...	North Dakota: conic projection.
80	...	...	...	GRAPHS
..	181	...	...	Climatic Chart (yearly).
..	...	...	...	Monthly Weather Chart.

Tear out this price list for future reference

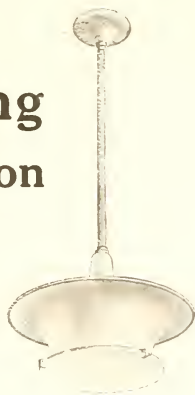
**The University of Chicago Press**  
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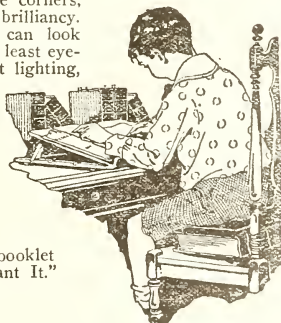


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fills every part of the room, even the corners, with a thoroughly diffused, restful brilliancy. Glare is absolutely eliminated. You can look directly at this lighting unit without the least eye-strain. It combines direct and indirect lighting, having the merits of both and the faults of neither.

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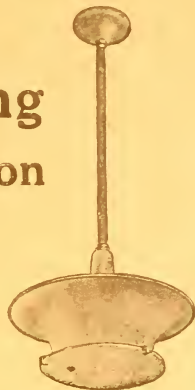


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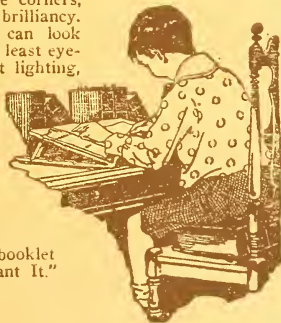


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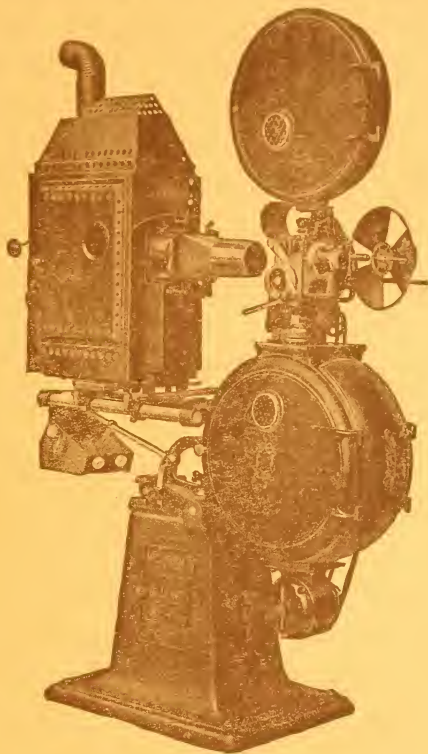
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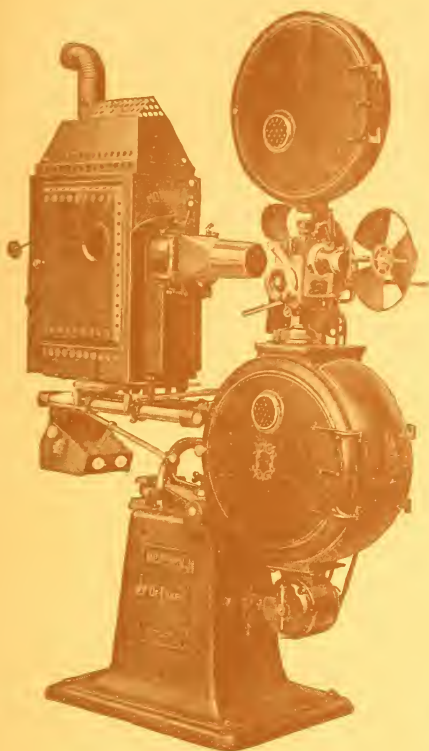
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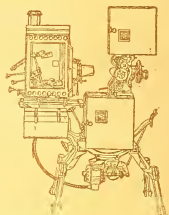
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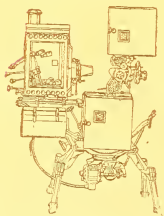
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PROJECTOR

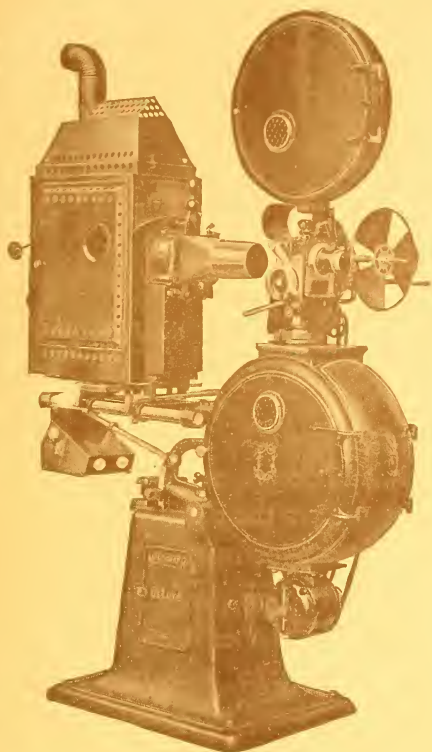
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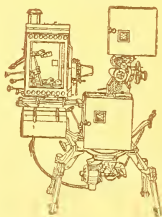
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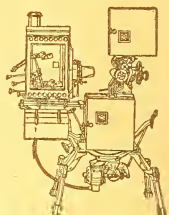
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